

**STATE OF ILLINOIS  
ILLINOIS COMMERCE COMMISSION**

**Commonwealth Edison Company**

**Petition for Approval of Delivery Services  
Implementation Plan and for Approval  
of Certain Other Amendments and Additions  
to Its Rates, Terms and Conditions**

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) No. 99-0117  
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**DIRECT TESTIMONY OF EDWARD C. BODMER  
ON BEHALF OF THE CITY OF CHICAGO**

**DATED: April 30, 1999**

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**TESTIMONY OF ED BODMER**

**I. INTRODUCTION**

1    Q.    What is your name and on whose behalf are testifying?

2    A.    My name is Ed Bodmer. My business address is 205 North Michigan Avenue,  
3           Chicago, IL 60601. I am testifying on behalf of the City of Chicago ("City").

4    Q.    Summarize your educational background and professional experience.

5    A.    I received a B.S. degree in Finance with highest honors from the University of  
6           Illinois in 1979 and an MBA degree with honors from the University of Chicago  
7           in 1986. My regulatory experience began with my employment on the  
8           Accounting and Finance Staff of the Illinois Commerce Commission  
9           (ACommission), and has encompassed numerous assignments on regulatory  
10          issues as a consultant. In a past position as a Vice President at the First National  
11          Bank of Chicago, I managed the credit analysis of all energy loans, which

12 included transactions with electric and gas utility companies. I also directed a  
13 number of energy related financial advice projects for bank clients. For the past  
14 ten years I have developed a consulting practice in the electric utility industry  
15 which has involved assignments for financial institutions, utility companies, and  
16 government agencies. My projects have addressed topics including industry re-  
17 structuring, forecasting, pricing, resource planning and performance evaluation. I  
18 have testified before this Commission and others on a wide variety of subjects,  
19 including cost-of-service and rate design. Recently, I have completed a number  
20 of assignments involving deregulation of electric utility generation including  
21 analysis of the divestiture of generating assets on behalf of the Maine Public  
22 Service Commission.

23 Q. Do you have experience with respect to cost of service and rate design in Illinois?

24 A. I have a general familiarity with the utility companies in Illinois from my work on  
25 the Commission Staff in the 1980's. In the context of several consulting  
26 assignments I have repeatedly analyzed rate design and cost-of-service issues  
27 related to Commonwealth Edison ("ComEd" or "Company") tariffs since 1990.  
28 Relevant projects included testimony on cost of service and rate design in  
29 Commonwealth Edison's 1994 rate case; analysis on behalf of Suburban Councils  
30 of Government with respect to implementation of the Infrastructure Maintenance  
31 Fee and the Utility Tax; development of analyses to support the City's franchise  
32 negotiations with Edison in 1990 and 1991; analysis of electricity legislative

options on behalf of the ALocal Government Alliance (the Chicago Transit Authority ("CTA"), the Chicago School Board, the Chicago Park District, the Chicago City Colleges and the City of Chicago); and, direction of the City's efforts in the co-operative cost study activities required by the City/Edison franchise agreement.

Q. Summarize the issues you are addressing in this case.

A. I am addressing four general subject areas as follows:

1. **Pricing Issues** associated with elements of ComEd's proposed rate design and cost study that impact the City and related agencies such as the CTA, the Chicago Park District and Chicago City Colleges.
2. **General Competitive Issues** associated with the question of whether ComEd's proposed delivery service tariffs encourage the development of competitive electricity markets in a manner that is fair to consumers and suppliers as well as to ComEd.
3. **Cost of Service Issues** associated with ComEd's embedded and marginal cost of service studies from the perspectives of economic theory and the development of efficient delivery services rates.
4. **Rate Design Issues** associated with ComEd's proposed delivery service rate components from the perspectives of various different types of customers.

## II. SUMMARY OF RECOMMENDATIONS

54 Q. What are your findings and recommendations with respect to issues associated  
55 with specific rate classes that are applied to the City, the CTA and City Colleges?

56 A. ComEd's delivery service tariffs applicable to customers on rider Governmental  
57 Consolidated Billing ("GCB"), CTA traction power and street lighting should be  
58 revised in the following manner:

59 - ComEd's proposed CTC rider does not differentiate between customers  
60 currently taking service under rider GCB and other customers currently  
61 taking service on Rate 6 or Rate 6L for customer accounts with usage  
62 below 3 MW. This approach is contrary to the Public Utilities Act  
63 ("Act"), unfair to customers on rider GCB and, inconsistent with ComEd's  
64 treatment in circumstances such as Rider 26, Rate CS and Rate 18.

65 - ComEd's cost allocation and rate design for street lighting rate does not  
66 fully account for distribution wires and transformers that are owned by  
67 municipalities rather than ComEd. For example, the ComEd study does  
68 not recognize that the City of Chicago and the Chicago Park District own  
69 many of the transformers associated with street lighting and that the City  
70 owns overhead and underground secondary wire between most of the  
71 street light poles.

72 - ComEd's very high distribution line loss factor for the street lighting class  
73 has questionable justification. With only one exception, the distribution

74 line loss percentage applied to ComEd's street lighting class is higher than  
75 loss factors applied to any other class for any other utility in the State.

76 - ComEd's "point of supply" charge imposed on railroad customers is not  
77 consistent with the manner in which customer charges are imposed on all  
78 of ComEd's other customers. The delivery service tariffs should not retain  
79 this inconsistent element of ComEd's rate design.

80 Q. What are your findings and recommendations with respect to the second issue  
81 relating to whether ComEd's proposed delivery services tariffs promote the  
82 development of competitive markets?

83 A. If implemented in their current form, ComEd's delivery service tariffs will harm  
84 development of competitive markets in the following ways:

85 - Through ComEd's inclusion of its marketing and other "customer  
86 handling" costs in its delivery service rates and riders, delivery service  
87 customers pay twice for many costs of "converting" wholesale power.  
88 Furthermore, ComEd is potentially recovering costs that it can avoid when  
89 customers no longer select the utility company for generation service. For  
90 example, ComEd proposes to recover certain costs related to its general  
91 marketing and its efforts to develop customer relationships in the delivery  
92 service tariffs.

93 - ComEd's delivery service tariff approach collects other customer handling  
94 costs related to provision of power and energy services through the  
95 transition charge. Expenses such as uncollectibles attributable to  
96 generation and certain overhead costs related to retail marketing are

97 components of value of the commodity and should be part of the  
98 determination of the market value of power and energy that is included in  
99 the market value component of ComEd's PPO tariff. Collection of a  
100 portion of the utility company's retail market value from customers of  
101 competitors as well as through the utility company's transition charge will  
102 harm development of competitive markets.

103 - ComEd proposes to retain monies associated with penalties the Company  
104 imposes on customers and/or competitive suppliers for scheduling  
105 imbalances. This approach implies that shareholders can over-recover  
106 costs. ComEd's proposal does not include a provision to verify specific  
107 out-of-pocket costs associated with the imbalance charges. To the extent  
108 that imbalance "penalties" are not cost-based, these penalties should not  
109 increase returns to ComEd shareholders. Instead, projected penalties  
110 should be added to the market value credit in the PPO tariff.

111 - Customer handling costs that are incurred by all suppliers, such as supplier  
112 billing, scheduling and risk management costs should be added to the  
113 market value credit in the PPO tariff to reflect the value of power and  
114 energy to retail customers.

115 - The billing credit in the single billing option ("SBO") tariff, which ComEd  
116 measures at short-run avoided cost, is not fair to customers or neutral with  
117 respect to competition, is not economically efficient, and may create a bad  
118 precedent for future "unbundling." ComEd's credit is far lower than the  
119 credits developed in other states and it is inconsistent with both ComEd's  
120 own marginal cost study the manner in which the Company computes  
121 DASR fees. The billing credit should be established using data from  
122 ComEd's embedded or its marginal cost of service study.

123 Q. What are your findings and recommendations with respect to ComEd's  
124 distribution cost of service study -- the third issue you address.

125 A. ComEd's presentation is not a true marginal cost study that measures incremental  
126 resource allocation. The Company's study separates ComEd's existing  
127 distribution system by density level and re-prices system components at current  
128 equipment prices. ComEd's approach does not measure true marginal costs  
129 resulting from resources allocated to distribution expansion and its method does  
130 not necessarily provide a basis for efficient rate design. Specific problems  
131 include:

132 - ComEd's cost of service study does not recognize the basic fact that  
133 electric distribution system planning is performed for smaller regions than  
134 the whole system. ComEd has previously recognized true distribution  
135 marginal cost through analysis of distribution expansion by region that  
136 provided the basis for its industrial development rider (Rider 19).

137 - If marginal distribution costs are used to advance economic efficiency,  
138 customers who cause the utility company to build new facilities to connect  
139 to the system should have price signals tied directly to those marginal  
140 costs. Customers who are connected using existing facilities (and  
141 therefore generally do not directly cause ComEd to install new facilities)  
142 should incur prices determined by the remaining embedded costs.

143 - ComEd's marginal cost study incorrectly assumes that simply maintaining  
144 service is a "unit of consumption" for purposes of measuring marginal  
145 cost. Attributing costs on the basis of units that do not vary and cause no



resources to be allocated contradicts the basic resource allocation principles of marginal cost. For example, ComEd's current study retains its long-standing misconception that re-pricing meters at current cost and dividing the result by total customers is an appropriate measure of marginal cost. ComEd should correct this basic flaw throughout its marginal cost study.

- ComEd's marginal cost study applies a discount rate that includes expected inflation to distribution and meter costs that are stated in current dollars. This approach is mechanically incorrect and double counts inflation. Use of a real carrying charge is recognized as appropriate in marginal cost literature and is applied in other states that use marginal cost pricing.

Q. What are your findings with respect to the fourth issue -- ComEd's delivery service rate design.

A. ComEd's proposed delivery service rate design includes many elements that are not consistent with its cost of service study and are not fair to sub-groups of customers:

- ComEd proposes a "ratchet" in determining the demand charge whereby the highest single demand for the prior twelve months drives the demand charge. This feature is a novel change to previously approved ComEd rate designs. The ratchet is disadvantageous to customers who have significantly different demands from month-to-month, and it is inconsistent with marginal cost of service principles. There is no

169 persuasive reason for ComEd to change its basic demand measurement  
170 methodology as part of this case.

171 - ComEd's tariffs for delivery services do not differentiate between firm and  
172 non-firm customers and the PPO rider does not include an interruptible  
173 option. Given ComEd's presumption that marginal costs are incurred from  
174 overall system demand, there is no basis for imposing the same demand  
175 charge on non-firm customers as firm customers. Instead, the delivery  
176 service tariffs should differentiate for non-firm customers in the DSCR  
177 tariff.

178 - Because the entire price of delivery services, other than the customer  
179 charge, is derived from levels of demand, low load factor customers such  
180 as the City Colleges pay significantly higher average rates per kWh of  
181 usage than high load factor customers. By basing the entire charge on  
182 demand and none on usage, ComEd implicitly makes a number of  
183 implausible assumptions in the measurement of marginal cost.

184 - ComEd proposes that customers with monthly demand above 100 kW  
185 must have the company install interval meters if they acquire power from  
186 alternative suppliers. The costs of these meters increase customer charges  
187 for relatively small business customers. ComEd mandates that relatively  
188 small customers must install and pay for interval meters to avoid "gaming  
189 costs" associated with these load profiling. Since avoidance of gaming  
190 costs assists ComEd rather than the individual customers, the incremental  
191 meter costs should be incorporated as a cost of the transition to  
192 competitive markets rather than imposed as customer charges on specific  
193 customers.

### III. CITY OF CHICAGO OBJECTIVES IN THIS CASE

195 Q. Explain the objectives of the City in this case and why you have addressed these  
196 issues.

197 A. The City has a number of objectives in this case related to economic development,  
198 fairness of electric rates to all customers, and budgetary concerns. Utility  
199 companies are certain to argue that determinations for non-residential customers  
200 on cost of service measurement, and policies that are required by the 1997  
201 Amendments to the Act to promote the development of competition, should  
202 control the residential delivery service tariffs to be filed next year. If this case  
203 results in tariff and/or cost of service policies that are adverse to the development  
204 of competition or if the outcome results in inequitable and/or inefficient delivery  
205 service rate design, the policies may be difficult to reverse. Therefore, specific  
206 City objectives include the following:

207 - The City has consistently advocated policies that promote competition as a  
208 means to achieve economic efficiency. In this vein, the City is critically  
209 evaluating ComEd's proposed delivery service tariffs from the perspective  
210 of whether the Company's proposed tariffs promote fair competition.

211 - The City has actively considered ComEd rate design issues on behalf of  
212 residents and businesses in Chicago for many years from an equity and  
213 efficiency perspective. Rate design issues decided in this case could set

214 important policies and have significant effects on the economic position of  
215 businesses and residents in the City.

216 - The City has questioned and critiqued ComEd's cost studies in previous  
217 cases and continues to have an interest in the theoretical foundation and  
218 applicability of the studies.

219 - The City has been particularly concerned with residential rate design for  
220 low use customers in ComEd's past two rate cases. While delivery service  
221 rates have not been established for residential customers, the cost of  
222 service procedures developed in this case might be applied to residential  
223 customers as well as business customers when residential customers are  
224 allowed access in 2002.

225 - The City and related agencies, such as the CTA and the Park District are  
226 very large users of electricity with electric bills in excess of \$100 million  
227 per year. From a budget perspective, the City has an interest in assuring  
228 that it is not paying more than necessary for electricity.

229 Q. How is the remainder of your testimony organized?

230 A. My testimony is organized in the same order as the recommendations I  
231 summarized above. I first evaluate the fairness of specific rates from the  
232 perspective of the City itself as a consumer. Next, I consider issues associated  
233 with promoting fair competition. Third, I comment on certain aspects of ComEd's  
234 cost of service studies used to support the proposed rates. Finally, I discuss rate  
235 design issues arising from ComEd's proposed delivery service rate design.

236

#### IV. CITY SPECIFIC PRICING ISSUES

237 Q. Do you have concerns with respect to ComEd's proposed delivery service tariffs  
238 with respect to prices that apply to City facilities?

239 A. Yes. I have concerns about certain tariff elements proposed by ComEd that  
240 specifically impact the City of Chicago and other local government entities. My  
241 concerns include the fact that customers on Rider GCB are not classified as a  
242 separate class for purposes of computing transition charges; that ComEd's  
243 delivery charges for street lighting do not reflect transformers and conductors  
244 owned by the City; and the inequitable point of supply charge in ComEd's railroad  
245 rates.

##### 246 A. TRANSITION CHARGES FOR RIDER GCB CUSTOMERS

247 Q. Under ComEd's tariffs, how are transition charges computed for customer  
248 accounts below 3 MW?

249 A. It is not clear. In a data request response, ComEd stated that GCB customers  
250 would be grouped with other customers that have similar usage for purposes of  
251 the CTC calculation in cases where monthly demands are below 3 MW.  
252 Therefore, ComEd makes no distinction by class when computing the transition

253 charge for customers who take service under Rider GCB relative to other  
254 customers. The transition charge is derived by subtracting market value and  
255 delivery service revenues and from base rates or contract rates. Since Rider GCB  
256 provides lower rates for customers due to diversity and other factors, customers  
257 on Rider GCB are denied the statutory benefit of the lower rates they paid, and  
258 ComEd recovers more than merely "lost revenues." For example, because of  
259 load diversity and the structure of the GCB demand charge, GCB customers may  
260 pay rates that are 5% to 10% below what they would have paid under Rate 6 or  
261 Rate 6L. If the GCB customers are grouped with other non-GCB customers for  
262 purposes of calculating transition charges, the rate they actually paid is effectively  
263 ignored, and ComEd over-recovers.

264 Q. Is this portion of ComEd's proposed rate design consistent with the Act?

265 A. No. In section 16-102, the Act defines the base rate component of transition  
266 charges as:

267 "the amount of revenue that an electric utility would receive from the  
268 retail customer or customers if it were serving such customers' electric  
269 power and energy requirements as a tariffed service ...adjusted for ... to  
270 the extent applicable, any contract rates, **including contracts or rates for**  
271 **consolidated or aggregated billing**, under which such customers were  
272 receiving electric power and energy ..."

273 This definition of transition charges in the Act implies that governmental  
274 customers that signed a contract to take service under the government

275 consolidated billing rider should receive an adjustment for the base rate  
276 reductions resulting from the aggregation of load in the contract.

277 Q. Does ComEd compute separate transition charges for other customers that take  
278 service under various other riders?

279 A. Yes. For example, ComEd states that "CTC calculations will be performed on an  
280 individual basis for customers receiving service under Rate 18 – Standby Service,  
281 Rider 26 – Interruptible Service, Rider 27 – Displacement of Self-Generation and  
282 customers served under individual special contracts." (ComEd Exhibit 12.0, at  
283 page 31.) These rates and riders are analogous to Rider GCB. There is no reason  
284 that governmental customers who take service under Rider GCB should be  
285 penalized relative to these other consumers.

286 **B. DELIVERY SERVICE RATES FOR STREET LIGHTING CUSTOMERS**

287 Q. Describe the general nature of street lighting service in ComEd's service territory.

288 A. In very general terms, street lighting service can be separated according to  
289 whether customers own their own lamps, poles and other equipment or ComEd  
290 provides the lamps and other facilities. The City and the Chicago Park District  
291 generally own the poles, overhead and underground secondary wires between the  
292 poles, lamps and a number of transformers used to provide street lighting. The

293 City and the Chicago Park District purchases electricity for street lighting as part  
294 of the class called "Other Street lighting" in ComEd's proposed delivery service  
295 tariffs.

296 Q. How does ComEd compute cost of service for the City Street Lighting?

297 A. ComEd computes marginal cost of street lighting by measuring the estimated cost  
298 of secondary wires, transformers and switch gear for typical density situations.  
299 These cost components are weighted by density, converted to annual charges and  
300 attributed a general plant factor. Operation and maintenance costs are added to  
301 the investment costs, resulting in an annual cost per kW of about \$25. In  
302 ComEd's study, the cost of secondary wires, transformers and switch gear is the  
303 same for customers in the "dusk to dawn" sub-class who own fixtures as in the  
304 fixtures included sub-class where ComEd owns all of the poles and secondary  
305 wire. City Exhibit 1.01, Schedule 1 demonstrates ComEd's calculation of  
306 marginal distribution cost for the dusk to dawn street lighting class.

307 ComEd's approach obviously does not recognize that the City of Chicago owns  
308 poles, wire and many transformers associated with the street lighting service and  
309 incurs many of the costs included in its cost of service calculation. Where the  
310 customer owns secondary wire, the cost allocation of secondary equipment should  
311 be zero. Similarly, where the customer owns the required transformers, the  
312 measured cost of transformers in the cost study should be zero.



313 Q. Have you computed street lighting tariffs that correctly account for equipment  
314 owned by the City of Chicago?

315 A. Yes. Schedule 2 of City Exhibit 1.01 shows a recalculation of delivery service  
316 costs for dusk to dawn street lighting, correcting for situations where the  
317 municipality owns secondary wire and a portion of the transformers. Specifically,  
318 the allocation for secondary wires is reduced by 90% and the allocation of  
319 transformers is reduced by 10% reflecting City and Chicago Park District  
320 ownership of a number of transformers. Employing ComEd's methodology, the  
321 marginal cost declines from \$0.00729 per kWh to \$0.00603 per kWh and the  
322 delivery charge adjusted to meet the revenue requirement declines to \$0.00458  
323 per kWh.

324 Q. How does the line loss that ComEd attributes to street lighting load compare to  
325 the line loss attributable to other non-residential customer classes?

326 A. As shown in ComEd's RCDS Tariff, dusk to dawn street lighting customers are  
327 attributed a line loss factor of 9.3%. This compares with an average loss factors  
328 attributable to other non-residential customers of 5.9%. Street lighting customers  
329 are assigned a distribution loss factor higher than any other classes in ComEd's  
330 delivery services tariff.

331 Q. Is the distribution line loss factor important for customers that choose alternative  
332 suppliers?

333 A. Yes. When customers buy power from alternative suppliers, they must purchase  
334 the amount of power which is measured at their facilities plus the estimated line  
335 losses. If the line loss factor for street lights were 5% instead of 9%, the street  
336 light customers would experience an effective electric bill reduction that is 4%  
337 (i.e. 9%-5%) when the transition charge expires.

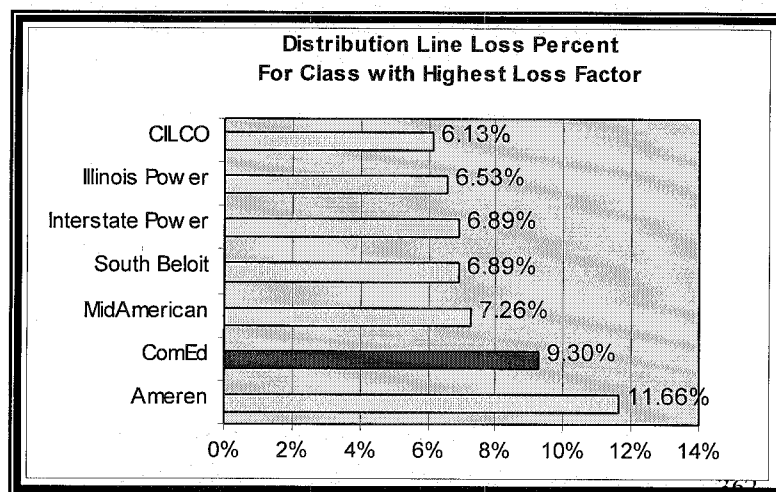
338 Q. How did ComEd estimate distribution line losses for various customer classes?

339 A. ComEd computed two types of losses -- core losses and conductor losses.  
340 According to the Company, core losses are "essentially constant at any load"  
341 while conductor losses depend on the amount of distribution facilities required to  
342 serve the customer. (ComEd DST.9200 (a) at page 1.) Other than the general  
343 explanation of core losses and conductor losses, ComEd presents little  
344 documentation of its approach for measuring losses and it is not clear whether the  
345 Company accounted for the fact that most street lighting use occurs during  
346 periods of time when the weather is relatively cold.

347 Q. How does ComEd's distribution line loss factor for street lights compare to the  
348 loss factors in other tariffs?

349 A. The graph below compares the loss factor ComEd applied to street lighting with  
 350 the highest loss factor applicable to non-residential customer classes for proposed  
 351 delivery service tariffs of other utilities in the state. The graph demonstrates that  
 352 ComEd's loss factor is higher than the loss factor applicable in the delivery  
 353 service tariffs of any other company except secondary customers in Ameren's  
 354 territory. Furthermore, no companies other than ComEd differentiated the line

355 loss factors for street



lighting. The  
 average line loss  
 factor applicable to  
 street light tariffs in  
 service territories  
 other than ComEd,  
 assuming the street

363 lighting receive the highest non-residential loss factor, would be 7.55%.

364 Q. What is your recommendation with respect to street lighting distribution line loss  
 365 factors?

366 A. I recommend that the street light class be attributed a loss factor of 7.125% which  
 367 is the average of the distribution loss factors for ComEd's non-residential rate  
 368 classes with monthly demand below 1 MW.

369           **C. DELIVERY SERVICE RATES FOR RAILROAD CUSTOMERS**

370       Q.     Is the point of supply charge for railroad customers consistent with other elements  
371               of ComEd's rate design?

372       A.     No. For customers other than railroad customers, a single customer charge is  
373               imposed and Rider 7 is used to attribute costs of additional metering equipment.  
374               On the other hand, the two railroad customers (the Chicago Transit Authority and  
375               the Illinois Central Gulf Railroad) are assessed a "point of supply" charge for each  
376               facility at which ComEd's distribution system connects with the electric railroad.  
377               ComEd measures the cost of each point of supply by accumulating meter costs for  
378               meters at each point. As a result, the facilities charge for the CTA traction power  
379               is \$10,933 per month exclusive of about \$4,500 per month it already pays in Rider  
380               7 charges. By comparison, the facilities charge for customers who use 10 MW or  
381               more, is \$261.

382       Q.     Are there unique circumstances for railroad customers in terms of customer costs  
383               that warrant a different pricing treatment for the facilities charges?

384       A.     Not with respect to the CTA. Because the CTA or the City, rather than ComEd,  
385               owns transformation equipment, there is no argument that ComEd experiences  
386               particularly high customer costs with respect to the CTA. Further, as I stated

387 above, the CTA pays Rider 7 charges associated with the AMR meters at its  
388 transformation stations on top of the point of supply charge. Finally, the fact that  
389 the CTA is served at more than one supply point is not a unique circumstance. In  
390 response to the City's Data Request 8, ComEd stated that "there are numerous  
391 circumstances in which a customer with a single electrically connected set of  
392 facilities is served by multiple transformers."

393 Q. What is your recommendation with respect to the point of supply charge imposed  
394 on railroad customers?

395 A. The points of supply charge should be replaced with a facilities charge identical to  
396 the facilities charges imposed on other customers who have monthly demand of  
397 more than 10 MW per month.

398 Q. The demand charge for railroad class is lower than for any other non-residential  
399 rate class. Does this mean that railroad customers will pay lower charges for  
400 distribution than other classes somehow off-setting the high facilities charge?

401 A. No. The CTA reaches its daily peaks during the morning rush hour, which is not  
402 coincident with regional coincident peaks on ComEd's distribution system.  
403 Further, the railroad demands vary significantly from month to month. This  
404 means that the ratcheting feature of ComEd's proposed tariffs are very costly for  
405 the railroad class in relation to other non-residential customer classes. Table 5

406 shown below (in the section of addressing rate design issues) demonstrates that  
407 ratcheting increases revenue collection relative to the cost causation coincident  
408 demands by 133% for the railroad class, while ratcheting increases revenue  
409 collection in relation to coincident demand by 30% - 55% for other non-  
410 residential customers with monthly demands above 1 MW.

## 411 V. COMPETITIVE ISSUES

### 412 A. INTRODUCTION ON CUSTOMER HANDLING COSTS

413 Q. How do you define customer-handling costs for purpose of this part of your  
414 testimony?

415 A. I define Customer handling costs as those costs that generally cover arrangements  
416 needed to offer and supply power purchased in wholesale markets to retail  
417 customers. ComEd has incorrectly incorporated customer handling costs in the  
418 delivery service tariffs for the following four categories of costs:

419 1. **Customer Handling Costs in Delivery Charge Tariffs:** Costs included in  
420 the delivery service revenue requirement that are related to general marketing  
421 and customer relationship building activities and are not necessary for  
422 monopoly provision of distribution services.

423 2. **Customer Handling Costs in Transition Charges:** Costs included in  
424 ComEd's proposed transition charges that are related to power marketing,  
425 uncollectible accounts expenses on generation, and overhead costs allocated to  
426 generation associated with retail activities.

427 3. **Non-Cost-Based Penalty Charges:** Costs that customers and suppliers incur  
428 for scheduling imbalance penalties that are not out-of-pocket costs from  
429 ComEd's perspective.

430 4. **Other Supplier Costs:** Costs of scheduling, billing, and commodity price  
431 management that are not now reflected in the market value credit and are not  
432 incurred in significant magnitude by ComEd when it sells power on a retail  
433 basis.  
434

435 I address each of these categories of cost separately in the discussion below. Note  
436 that the "customer handling" label is not magic. It is nature of the costs I discuss -  
437 related to competitive generation activities and avoidable by ComEd - that  
438 determines their proper treatment. Further, inclusion of ComEd costs to represent  
439 components of market value results in a **lower bound** estimate of market value.

440 Q. Why is the treatment of customer handling costs that "convert" wholesale market  
441 prices to retail prices important from a customer perspective?

442 A. Given the relatively small savings available to customers due to the effect of the  
443 lost revenue formula, unless all components of the market value of power and  
444 energy - not just the raw commodity price - are reflected in the market value  
445 credits, the savings can be eliminated and the development of competitive markets  
446 may be slowed. *My analysis presented at the end of this section illustrates that*  
447 *the 8% targeted savings that in theory results from the mitigation charge*  
448 *becomes only 1.3% if customer handling costs are not treated appropriately.*

449 Q. In making adjustments for customer handling costs, do your proposed adjustments  
450 cause ComEd to under-recover costs in relation to lost revenues less mitigation  
451 charges?

452 A. No. In developing adjustments for customer handling costs, I focus on elements  
453 where ComEd does not recover less revenues than the targeted revenue levels  
454 from the formula set forth in Section 16-102 of the Act:

455 Lost revenues to be collected **equals** base revenues **minus** delivery charge  
456 revenues **minus** market value of power and energy **minus** the mitigation  
457 charge.

458 If ComEd can avoid or not incur a customer handling cost that is included in the  
459 market clearing retail power price when the Company does not provide service to  
460 a customer, ComEd remains "whole" relative to the transition charge formula. In  
461 other words, as a result of the adjustments I describe below, *the cost recovery by*  
462 *ComEd is the same amount as it would be if the Company sold power to non-*  
463 *residential customers at base rates and achieved the mitigation charge savings*  
464 *through increasing efficiency.* Conversely, if these costs are not appropriately  
465 treated, ComEd could realize revenues in excess of those contemplated by the lost  
466 revenue formula and competition could be harmed.

467 Q. In your opinion, what are the standards by which ComEd's proposed tariffs should  
468 be evaluated from the perspective of customer handling costs?



469 A. While customer handling costs encompass a variety of different items and the  
470 proper tariff treatment depends on how costs are currently incurred, two general  
471 principles should drive Commission's decisions. These two principles include  
472 are:

473 1. Customers should not pay twice for customer-handling. In other words,  
474 customers should not pay both a competitive supplier and ComEd for  
475 customer handling costs. Such costs are a function of participation in  
476 competitive markets and should be added to the market value credit in the  
477 PPO tariff.

478 2. If ComEd can potentially avoid customer handling costs through not  
479 providing generation service to customers, these customer handling costs  
480 should not be included in either the delivery service tariff or the transition  
481 charge. To the extent that ComEd now includes customer handling costs  
482 in non-by-passable delivery charges or transition costs, they should be  
483 removed. Instead, the customer handling costs should be recognized as a  
484 component of the market value used as a credit in the PPO and CTC  
485 computations.

486 In correcting problems associated with ComEd's treatment of customer handling  
487 costs, different adjustments are appropriate for various cost elements. However,  
488 one adjustment is essential in every case -- the market value credit must reflect

489 market **value** -- including customer handling -- rather than the raw wholesale  
490 commodity cost.

491 Q. Explain why retail value rather than wholesale cost is appropriate in measuring  
492 market value for purposes of the PPO tariff and the CTC rider.

493 A. To demonstrate why retail value is the appropriate measurement of the market  
494 value for power and energy rather than wholesale cost, consider the analogy of  
495 automobiles sold through dealerships. The wholesale cost is the amount at which  
496 a manufacturer (e.g., GM) sells a car to a dealership. The market value or retail  
497 market clearing price is the amount at which the car can ultimately be sold to  
498 consumers. The difference between wholesale cost and retail market value must  
499 cover costs the dealer incurs in marketing, billing, holding inventory, incurring  
500 bad debts, and other "customer handling" items. These costs are over and above  
501 the "delivery" costs of moving the car from the manufacturer to the dealership. If  
502 the retail market value does not cover these customer-handling costs, in the long  
503 run, dealerships will eventually go out of business. The fact that automobile  
504 dealerships exist implies that the customer handling costs indeed are included in  
505 market clearing prices and have value in the automobile market. Such customer  
506 handling costs are incurred by all suppliers, and the power and energy "market  
507 value" must include these costs that are incurred in selling power to retail  
508 customers.

509 Q. Is measurement of retail market value including customer handling costs  
510 consistent with the statutory scheme of the Act.

511 A. Yes. The definition of CTC, the NFF market value determination process, and the  
512 purchased power option provision of the Act all incorporate the "market value of  
513 power and energy" concept. That concept includes "other demand" components  
514 which should theoretically reflect customer handling items.

515 Q. Does ComEd's treatment of customer handling costs meet the two principles you  
516 described above?

517 A. No. ComEd's approach in developing delivery service tariffs is to use "wholesale  
518 type" market prices to estimate the market value of energy in the CTC and PPO  
519 tariffs. In addition, ComEd does not unbundle costs included in its delivery  
520 service tariffs as between distribution costs and other costs such as marketing  
521 research and economic development. The Company's method means that many  
522 customer handling costs that have been prudent costs and legitimately included in  
523 bundled generation/transmission/distribution base rates in previous cases are now  
524 included into one of two rate buckets that are "non-by-passable" to delivery  
525 service customers. These charges are -- either the delivery service price or the  
526 transition charge -- are unrelated to competitive generation service.

527 Under ComEd's approach, even if the Company acknowledged that a particular  
528 cost item such as sales expenses related to generation marketing activities  
529 expenses should not be included in delivery costs, there would be no overall  
530 impact on customer rates while transition charges are in place. In other words,  
531 from the perspective of customers who pay transition charges, "moving" customer  
532 handling costs from distribution to generation would simply increase the  
533 transition charge by the same amount as the delivery service price is reduced.

534 The net effect of ComEd's approach is that customers who select delivery services  
535 will pay all of the general overhead, marketing, strategic analysis, advertising,  
536 entertainment and other costs of competitive suppliers, who "recover" their costs  
537 through the price they charge for power and energy. At the same time, under  
538 ComEd's proposed approach, non-by passable charges will also support the  
539 Company's costs of arranging, offering and providing power and energy in the  
540 competitive market through delivery service prices and the CTC. ComEd's  
541 approach is unfair to delivery service customers, who will pay twice for the same  
542 type of costs, and it could significantly impede the development of competitive  
543 markets. Because these costs are components of the market value of power and  
544 energy, they should be reflected in the market value credit. Further, since ComEd  
545 can avoid these costs and still provide its required tariffed services, it need not  
546 recover less than the lost revenues provided in the CTC formulation. In fact,  
547 without the adjustments I propose below, ComEd could easily over-recover by

548           avoiding costs and collecting the CTC that does not take account of the full  
549           market value of power and energy.

550           **B. CUSTOMER HANDLING COSTS IN DELIVERY SERVICE TARIFFS**

551       Q.     Does ComEd's approach of including marketing costs in the delivery charge tariff  
552           allow the company to potentially recover more than its cost of service related to  
553           these costs.

554       A.     Yes. To illustrate how ComEd's approach could allow the Company to over-  
555           recover its costs, consider a scenario where all customers become delivery service  
556           customers. In this scenario, ComEd becomes a monopoly "wires" company. It  
557           could theoretically avoid many costs related to marketing, marketing research,  
558           public relations, relationship building and so forth that add to the value of  
559           competitive offerings. However, ComEd would continue collecting historical  
560           costs for these items either as a part of delivery service tariffs or as a component  
561           of the transition charge.

562       Q.     Are there better alternatives for the treatment of those customer handling costs  
563           that ComEd includes in its delivery charge revenue requirements?

564       A.     Yes. There are two alternatives that satisfy the two principles I defined earlier --  
565           i.e, delivery service customers do not pay twice for the costs and ComEd does not

566 have the potential to over-recover the costs. The first alternative is to include the  
567 marketing and related costs in delivery services costs, but to **unbundle** the costs  
568 and allow delivery service customers the option of not accepting ComEd's  
569 customer handling costs included in delivery charge revenue requirements related  
570 to competitive marketing. The second option is to recognize the value added by  
571 these costs in the **market value of power and energy credit** portion of the CTC  
572 and the PPO tariff. Thus, the delivery service tariffs (including the CTC) would  
573 be reduced by the same amount of customer handling costs. Both alternatives  
574 have the same net effect: Customers do not lose the mitigation factor savings  
575 because of ComEd's treatment of the customer handling costs; ComEd collects the  
576 amount it is entitled to under the lost revenue concept; and, duplicate costs are not  
577 imposed on customers taking delivery services.

578 Q. Explain how the first alternative -- unbundling delivery services costs for  
579 ComEd's market participation or customer handling activities -- would work in  
580 practice.

581 A. In the unbundling method, ComEd would separate its pure delivery services costs  
582 from costs related to customer marketing and customer handling. Delivery  
583 services customers would have the option of not accepting the unbundled ComEd  
584 customer handling services and would not pay this portion of the unbundled  
585 delivery charge if they choose not to accept the "customer handling" service.  
586 However, for purposes of computing the CTC, the entire amount of the delivery

587 service tariff including the unbundled marketing cost would be a subtraction in  
588 the formula. I believe that most customers who consciously choose a supplier  
589 other than ComEd would also choose not to accept ComEd's marketing services.

590 For delivery services customers choosing to not accept ComEd's marketing and  
591 customer handling services, the delivery service prices are reduced by those  
592 costs. Furthermore, the CTC is not changed according to whether or not  
593 customers decline to accept ComEd's marketing services. This means that, in  
594 comparison to delivery service tariffs which are not unbundled (i.e. ComEd's  
595 approach), the prices are lower by an amount equal to the marketing and other  
596 customer handling costs. Further, once the CTC expires, the delivery service  
597 tariffs are lower than they would otherwise be without unbundling the costs.

598 Q. Explain how the second alternative -- increasing the market value credit for  
599 marketing costs included in delivery services -- would work in practice.

600 A. ComEd's market value credit in the CTC would reflect the value added by  
601 ComEd's marketing and other customer handling activities through addition of a  
602 per MWH charge to the neutral fact finder ("NFF") or the alternative Index  
603 defined in the PPO tariff. A simple per MWH charge could be computed through  
604 dividing the total marketing, customer relationship development, entertainment,  
605 advertising, customer education and other customer handling costs by ComEd's  
606 test year sales. This would provide a **lower bound** to recognize the costs of

607 making wholesale power and energy available to retail customers. The  
608 adjustment is a **lower bound** because ComEd's customer handling costs that the  
609 company experienced as a bundled provider of electricity in the 1997 test year  
610 would be implicitly used to represent the increment to wholesale power cost for  
611 marketing activities. The larger market value credit would reduce the CTC for  
612 delivery service customers. In addition, the delivery service tariff would be lower  
613 by the amount of costs that are removed from delivery services and moved to  
614 market value.

615 During the time period in which the CTC exists, the lower delivery service prices  
616 increase transition charges (through reducing the CTC delivery charge credit)  
617 which offsets the CTC impact of the market value credit increase. In other words,  
618 increases in the market value credit offset decreases in the delivery service  
619 revenue credit and the CTC is not changed. However, customers do retain the  
620 benefits of the lower delivery charge prices. Once the CTC expires, delivery  
621 charges are lower than they would otherwise be by the amount of the marketing  
622 and other costs.

623 Q. How do the mechanisms that you described above compare to ComEd's approach  
624 of collecting marketing and related costs either through delivery service charges  
625 or the transition charge?



626 A. The table below demonstrates that while the mechanism for incorporating  
627 marketing and other costs is different in the two approaches I described above, the  
628 net impact on customer bills before and after the transition period is the same. On  
629 the other hand, if the costs are either included in bundled delivery services or in  
630 the transition charge, delivery service customers pay twice for the costs. The  
631 bottom two rows on the table demonstrate that if customer handling costs are  
632 included in the delivery service revenue requirement or the CTC by not adjusting  
633 the wholesale market cost, customers pay twice for the costs throughout the  
634 transition period. If a customer handling cost is included in the CTC and not in  
635 the delivery service revenue requirement, customers still pay twice for the cost  
636 over the transition period. If a customer handling cost is included in the delivery  
637 charge revenue requirement, customers pay twice for the cost for an indefinite  
638 time period.

639 Table 1

640 **Impact on Tariff Components Relative to ComEd's Proposed Delivery**  
641 **Service Tariffs ("Maintained" is the same as ComEd's proposal)**  
642

	Market Value Credit Approach	Unbundled Delivery Service Price	Removed from Bundled Delivery Charge	Included In Delivery Charge
Delivery Charges	Reduced	Reduced	Reduced	Not Reduced
CTC	Maintained	Maintained	Increased	Maintained
Net Effect while CTC is in Place	Reduced	Reduced	Maintained	Maintained
Net Effect after the CTC expires	Reduced	Reduced	Reduced	Maintained

643 ComEd's approach is incorporated in the final two columns of the above table.  
644 For most of its customer handling costs, ComEd included the costs as part of its

645 delivery service tariffs (column 4). However, for some of its sales expenses, the  
646 Company allocated costs to production and thereby included the costs in the  
647 transition charge (column 3).

648 Q. Given that the two methods -- unbundling delivery charges and increasing the  
649 market value credit -- have precisely the same result, do you advocate one method  
650 over the other?

651 A. Yes. While, either of the methods would be adequate, I believe it is somewhat  
652 more straightforward and more appropriate to increase the market value credit.  
653 Increasing the market value credit can be accomplished in this case. Also, this  
654 mechanism does not include in delivery service prices those cost components not  
655 necessary to provide monopoly delivery services.

656 **C. COMPUTATION OF MARKETING COSTS IN DELIVERY SERVICES**

657 Q. Did ComEd provide clear data on the costs that should be included as a  
658 component of the market value credit?

659 A. No. ComEd stated that various customer-related operation and maintenance  
660 expenses are incorporated in delivery charges, including "the costs of maintaining  
661 and servicing customer accounts", the costs of "customer service", and the costs  
662 of "addressing bill complaints" (ComEd Ex. 5.0 at page 4-6). Since ComEd

663 included some general marketing related costs as a component of its delivery  
664 service revenue requirement, the Company did not separately allocate the type of  
665 costs that should be designated customer handling costs. Therefore, I have  
666 developed an estimate of these costs from data provided by ComEd in its revenue  
667 requirement analysis, its embedded cost study, and data request responses.

668 Q. Do you have a different opinion from ComEd with respect to the type of costs that  
669 should be reflected in delivery charges?

670 A. Yes. In answering items 38, 39 and 40 of the City's First Data Request, ComEd  
671 responded that the following charges should be paid by delivery service  
672 customers:

- 673 1. Costs of ComEd's advertising agency
- 674 2. Portions of Board of Directors Fees that are attributable to establishing  
675 ComEd's competitive position.
- 676 3. Costs associated with ComEd's marketing programs such as entertainment.

677 I disagree with the Company regarding the ratemaking treatment of these items.  
678 First, these are not costs that are required to provide monopoly delivery services.  
679 Second, if delivery service customers pay ComEd for these costs, they will pay  
680 duplicate costs because competitive suppliers also incur the same type costs.

681 Q. What are some of the specific cost items that ComEd includes in its delivery  
682 service revenue requirement?

683 A. Some specific cost functions and activities identified by ComEd include:

- 684 1. Marketing research - customer assistance activities
- 685 2. Marketing planning - customer assistance activities
- 686 3. Competitive energy technical services
- 687 4. Promotional activities - customer assistance
- 688 5. Training marketing
- 689 6. Efforts to put customers on optimal tariffs
- 690 7. Assistance with customers to maximum curtailment
- 691 8. Assistance with sales and marketing employees in interpreting tariffs
- 692 9. Promotion of ComEd products and services
- 693 10. Pursuit of new business ventures in response to competitive markets
- 694 11. Promotion and retention of existing and prospective customers
- 695 12. Economic development activities
- 696 13. Promotion of customer satisfaction within National Markets
- 697 14. Industrial technical services
- 698 15. Small Business Customer Assistance Activities
- 699 16. Product and service development - customer assistance
- 700 17. Advertising costs for energy efficiency
- 701 18. Customer retention activities
- 702 19. Customer education not related to safety or outages
- 703 20. Customer information costs

704 These functions and activities do not appear to be costs related solely to the  
705 provision of monopoly delivery services.

706 Q. How have you estimated the dollar amount of marketing and relationship building  
707 activities included in ComEd's delivery service revenue requirement?

708 A. Since ComEd did not provide specific dollar amounts for these activities, I  
709 examine dollar amounts ComEd records in the customer accounts expenses  
710 (account numbers 901-905), customer service and information (account numbers  
711 907-910), sales expenses (accounts 911-916) and general and administrative  
712 expenses that ComEd classifies as customer services and marketing. However, I

713 have not included the total amount in these accounts, because the accounts  
714 include (1) amounts that are related to meter reading and billing; and, (2) amounts  
715 that are specifically related to distribution activities such as informational  
716 advertising on safety and outages.

717 City Exhibit 1.02 shows my calculation of marketing and customer relationship  
718 costs that are adjusted to subtract meter reading costs and billing costs. The  
719 fourth column is the total customer service, sales and customer other accounts  
720 included in the delivery charge revenue requirement. The fifth column is the total  
721 customer and sales costs multiplied by a factor of 43%, which I describe below.  
722 The rows in the exhibit include components of costs that make up ComEd's total  
723 revenue requirement for delivery services.

724 City Exhibit 1.02 demonstrates that the amount of marketing and customer  
725 relationship costs included in delivery service revenue requirements is  
726 approximately \$32 million. The methodology I described above reduces delivery  
727 charge revenue requirements by this amount and adds a corresponding amount to  
728 the market value credit through a per MWH charge.

729 Q. Why do you believe that ComEd did not appropriately allocate these costs  
730 between delivery service costs and production costs?

731 A. ComEd did allocate some sales expenses to production (although the costs are still  
732 included in the CTC). However, these allocations were subjective and clearly left  
733 significant marketing and customer relationship building costs in delivery  
734 services. For example, costs remaining in delivery services included 75% of  
735 small business marketing research; 100% of economic development; 80% of  
736 marketing and technical services; 50% of market planning for major accounts;  
737 and 100%, of training activities related to energy services and marketing. I  
738 believe most of these costs are more appropriately classified relationship building  
739 activities or other categories that are not fundamental to the delivery of electric  
740 power and could be avoided by a monopoly "wires" company that has little need  
741 to market. In other words, ComEd's computation clearly did not use as the  
742 standard for inclusion in delivery service costs the question of whether the  
743 marketing are necessary to the provision of delivery services.

744 Q. How have you determined the proportion of customer services and sales costs that  
745 should be included as customer handling related rather than delivery related?

746 A. Given the lack of justification for including these costs in delivery service revenue  
747 requirements, I asked the Company in a data request to provide the amount of  
748 marketing expenses that are specifically related to reliability and safety. ComEd  
749 was unable to answer that request by the date of this testimony. As an alternative,  
750 I have analyzed the description of ComEd's sales and customer service accounts  
751 on a function by function basis were possible. Using the account titles I have

752 quantified the percentage of ComEd's costs that could be classified as retail  
753 activities that are not purely associated with distribution. Further, even though all  
754 of the account descriptions included in ComEd's sales accounts fit this  
755 description, I have only removed 80% of these accounts because of statements in  
756 ComEd's Exhibit 5.0, page 6, that some of the activities involve "processing new  
757 service requests, transformer sizing requests, [and], power quality issues." As a  
758 result of the account analysis, I attribute 43% of customer and sales costs to  
759 customer handling.

760 Q. How is the dollar amount referenced in City Exhibit 1.02 incorporated in the  
761 delivery service tariffs.

762 A. Schedule 2 of City Exhibit 1.02 converts the dollar amount of \$32 million to  
763 various components of delivery service prices, the market value credit and the  
764 transition charge. The mechanics of adjusting ComEd's delivery service tariffs to  
765 appropriately reflect the removal of improper marketing and other relationship  
766 costs involves two steps. In the first step, delivery service tariffs should be  
767 reduced by the amount marketing costs that are non-distribution related. In the  
768 second step, the total costs that ComEd inappropriately allocated to delivery  
769 services should be added to the market value credit as representative of the market  
770 value added by the marketing activities causing the costs.

771 The first step of the process is shown on lines 2 to 4 of City Exhibit 1.02,  
772 Schedule 2. The delivery charges are reduced by \$32 million , which is  
773 equivalent to 2.43% of the total revenue requirement dollars that ComEd proposes  
774 to collect in delivery charges. Therefore, I have reduced each delivery charge  
775 tariff on an "across the board" basis by that percentage.

776 The second step of the process is shown on line 1 and line 6 of City Exhibit 1.02,  
777 Schedule 2. The total amount of marketing and relationship costs that should not  
778 be paid by delivery services customers on a cents per kWh basis is .0434 cents.  
779 This implies that the "translation" component of the PPO tariff should be  
780 increased by .0434 cents per kWh. Since delivery charges are reduced by the  
781 same dollar amount as the market value credit is increased, the transition charge  
782 does not change due to this adjustment. The transition charge adjustment is  
783 shown on lines 17 through 19 of City Exhibit 1.02, Schedule 2.

784 Q. ComEd is a large company, and the marketing costs allocated to delivery service  
785 revenue requirements seem relatively small. Will the increase in the market value  
786 credit be comparable to the costs alternative suppliers experience?

787 A. Probably not. The adjustment to the market value will likely be less than the  
788 marketing costs actually experienced by alternative suppliers. The marketing  
789 component calculated for ComEd is only about 1.6% of the wholesale market  
790 cost. However, use of ComEd's marketing costs in establishing a component of



791 the market value credit is a reasonable approach that assures the Company has an  
792 opportunity to collect lost revenues. In addition, delivery service charges do not  
793 include competitive marketing costs and customers do not pay duplicate costs as  
794 the price of using their competitive options. I emphasize that the method provides  
795 a **lower bound** on this component of customer handling costs.

796 Q. Should a similar adjustment be made for uncollectible accounts that ComEd  
797 allocates to distribution?

798 A. Yes. Although uncollectible expenses on delivery service are a legitimate cost  
799 that should be included in delivery service prices, ComEd's method does not  
800 account for credit and collection requirements imposed on alternative suppliers  
801 included in the RES tariffs. Because of the certification procedures and other  
802 credit requirements imposed on alternative suppliers that provide ComEd with an  
803 additional source of collections, an adjustment to historic uncollectible accounts  
804 expenses is required. Specifically, the uncollectible accounts expenses allocated  
805 to delivery service should be adjusted downwards to reflect the different credit  
806 collection procedures and assurances available to ComEd in cases where the  
807 ARES and customers use the SBO Rider.

808 The uncollectible expenses adjustment should also be used to increase the market  
809 value credit. As with the marketing costs, unless the adjustment is made, delivery  
810 service customers will pay twice for credit costs of alternative suppliers. Further,

the costs are avoidable by ComEd as I explained above, because of ComEd collections from the ARES. If the adjustment is not made to the market value credit, ComEd will over-recover a portion of uncollectible account expenses it allocates to distribution.

Q. How have you quantified the adjustment to uncollectible account expense related to distribution?

A. Since open access is not in place, there is no empirical data on ComEd's uncollectible expense attributable solely to delivery services customers. To estimate the adjustment, I have reduced ComEd's uncollectible accounts expenses allocated to delivery services by 10%. City Exhibit 1.02, Schedule 2 shows the impact of the adjustment on delivery service costs and the market value credit.

#### **D. CUSTOMER HANDLING COSTS IN TRANSITION CHARGES**

Q. Describe the customer handling costs that would be incurred by suppliers to offer power and energy to retail customers that ComEd includes in transition charges.

A. City Exhibit 1.02, Schedule 1, page 2 shows the dollar amount of sales expenses, general administrative overhead expenses associated with retail activities and uncollectible accounts expenses that ComEd allocates to production rather than delivery services. In total, these amounts sum to about \$72 million. These costs



849 some production customers, the cost of uncollectibles is one of the customer  
850 handling costs of market participation and should be reflected in the market price.  
851 At the same time, customers will presumably have to pay the costs associated  
852 with uncollectible accounts incurred by their alternative suppliers through the  
853 supplier's prices, as well as ComEd's rates. If customers are compelled to pay for  
854 the uncollectible expenses to both an ARES and ComEd, they are obviously  
855 overpaying.

856 Q. What are some specific examples of duplicate general overhead costs that meet  
857 the criteria whereby delivery service customers would pay under the ComEd  
858 proposal and for which a market value adjustment is appropriate?

859 A. It is tempting to include overhead costs such as the chairman's salary in this  
860 category. However, some overhead costs are already included in the wholesale  
861 market-clearing price. In an equilibrium market, the wholesale power price  
862 includes some overhead costs and these costs are properly allocated to production  
863 without an adjustment to the market value credit. City Exhibit 1.02, Schedule 1,  
864 page 2 summarizes the total amount of general and administrative costs that I  
865 classify as retail related expenses for which a market value adjustment is  
866 appropriate.

867 Q. How should customer handling costs allocated to production, such as the costs of  
868 uncollectible accounts and general overhead costs related to production, be treated  
869 for purposes of delivery service tariffs?

870 A. These costs should be added to the market value credit for purposes of computing  
871 the CTC. Lines 8 through 10 of City Exhibit 1.02, Schedule 2 illustrate the  
872 market value credit for these items using information from ComEd's embedded  
873 cost of service study. Since ComEd did not include these amounts in delivery  
874 service costs, no adjustment to the delivery services tariff is necessary. The  
875 increase in market value credit by the amount of the customer handling costs  
876 reduces the CTC by .0903 cents per kWh.

877 **E. PENALTIES FOR SCHEDULING IMBALANCES**

878 Q. What is your understanding of ComEd's proposal with respect to penalties for  
879 imbalances?

880 A. Penalties for scheduling amounts of power that differ from actual usage are part  
881 of ComEd's transmission tariff. I do not address the specific mechanics of  
882 ComEd's proposed method for imposing scheduling penalties on customers in this  
883 section of my testimony. Instead, this testimony addresses only the issues of how  
884 dollar amounts that ComEd collects in scheduling imbalance penalties should be  
885 treated from a ratemaking perspective.



886 Q. What is your understanding of how dollar recoveries are currently treated in  
887 transmission revenue requirements?

888 A. I understand that actual revenues collected from penalties are credited as a  
889 revenue source in computing overall transmission revenue requirements. Since  
890 the penalties were not a large dollar item in past, they have not represented a  
891 significant reduction in transmission revenue requirements. If the penalties do  
892 become a significant dollar item, customers would have to await a definitive  
893 transmission rate case before they receive rate reductions from the dollar amounts  
894 that ComEd collects.

895 Q. Is ComEd's approach to imposing penalties associated with scheduling  
896 imbalances equitable to customers?

897 A. No. To the extent that penalties are not cost based, ComEd shareholders recover  
898 the above cost penalties. For example, if ComEd collects \$50 million in  
899 imbalance penalties and these funds are not applied to reduce rates for alternative  
900 suppliers or delivery service customers, the Company will experience a \$50  
901 million increase in pre-tax income. Collection of this income does not reflect  
902 ComEd's marginal costs and ultimately results in customers paying higher than  
903 cost-based rates in their tariff.

904 Q. Explain what you mean by the term "cost-based" as it relates to scheduling  
905 penalties.

906 A. I understand that ComEd asserts that some of the penalties associated with  
907 scheduling imbalances -- i.e. dollar amounts above out-of-pocket costs -- are  
908 based on costs being experienced by the Company. If ComEd verifies that it  
909 spent identifiable amounts in specific situations associated I agree that the  
910 penalties are cost-based. However, unless the Company can verify the specific  
911 out-of-pocket costs associated with specific penalties, the money ComEd collects  
912 should be remitted to delivery service customers.

913 Q. What is your specific recommendation with respect to scheduling penalties that  
914 exceed verifiable costs?

915 A. My recommendation involves a two step process. In this proceeding, an estimate  
916 of the scheduling penalties as a percent of market value should be made and the  
917 market value included in the PPO tariff should be increased by the estimated  
918 penalty percentage. In this way, the penalties remain in place as behavior  
919 incentives, but the utility does not receive a windfall. At later dates, after actual  
920 experience is gained with imbalance penalties that are not cost-based, the  
921 percentage factor should be revised to reflect actual experience.

922 By increasing the market value credit, the transition charge is reduced by the  
923 amount of non-cost-based imbalance penalties. Reduction of the transition charge  
924 is equitable to both customers and ComEd shareholders because unless the  
925 adjustment is made, ComEd collects more in its revenues than it experiences in  
926 costs and customers will ultimately incur prices that are above cost.

927 Q. Have you made an assessment of the percentage adder that should be applied to  
928 the market value credit as part of this proceeding?

929 A. Yes. I assume that customers are out of balance by 12%, 10% of which is applied  
930 a penalty because of the "dead band" allowance of 2%. I also assume that the  
931 market price is the same as ComEd's out of pocket costs. Therefore, the 10%  
932 amount of load that is out of balance multiplied by a 10% penalty results in a 1%  
933 adder to the market price. I use this estimate on City Exhibit 1.02, Schedule 2.

934 **F. OTHER CUSTOMER HANDLING COSTS**

935 Q. Are there some customer handling costs that convert wholesale power to retail  
936 power that are neither in delivery service tariffs nor in the transition charge, but  
937 that should be included as a component of the market value credit?

938 A. Yes. Costs incurred by competitive suppliers for scheduling power, for their own  
939 billing and metering for generation, and for managing price risk are also customer



940 handling costs that should be included in market value. If these costs are not  
941 added to the market value credit, customers cannot achieve the mitigation factor  
942 savings. In other words, the issue is not whether one uses cost estimates related to  
943 customer handling of an alternative supplier or ComEd. Rather, the issue is  
944 whether the market value credit correctly reflects costs that suppliers actually  
945 incur in offering, arranging and providing services in the market. However,  
946 unlike the costs of that ComEd includes in the delivery service revenue  
947 requirement or the transition charge, costs of supplier billing, metering and  
948 commodity management are generally **not** part of ComEd's existing cost structure  
949 and are therefore **not** included either in delivery service prices or the transition  
950 charge.

951 Q. Given that supplier billing, scheduling and risk management costs are not  
952 included in the delivery service tariff or the transition charge, why should these  
953 costs be reflected in the market value credit?

954 A. If costs are reasonable and prudently incurred by alternative suppliers, they will  
955 add at least that much in value relative to power and energy. Logically, there has  
956 to be some increment above the raw commodity cost in the market value  
957 quantification to recognize such costs of operating in the market. These  
958 customer-handling costs will must be incurred by alternative suppliers in selling  
959 electricity; they are a legitimate part of doing business, and they should be  
960 reflected as part of the market value. Ignoring these costs in the market value

961 credit would be analogous to ignoring fundamental components of wholesale  
962 market prices.

963 Q. Have you made an independent assessment of these customer-handling costs as  
964 part of this testimony?

965 A. Yes. To estimate the costs, I have used ComEd's metering and billing costs as a  
966 basis to estimate added costs experienced by alternative suppliers. I have reduced  
967 the amounts ComEd includes in its cost study to reflect the fact that alternative  
968 suppliers do not provide precisely the same metering and billing service as the  
969 distribution company. In addition, I have estimated scheduling and risk  
970 management costs to each be 1% of the market price. City Exhibit 1.02, Schedule  
971 2 shows the impact of these adjustments on the market value credit. Lines 14 and  
972 15 of the exhibit illustrate my quantification of the market value adjustment as  
973 .275 cents per kWh.

974 Q. Since the increase in market value credit reduces the transition charge, doesn't  
975 ComEd lose money from these other handling costs?

976 A. Not necessarily. If ComEd can sell the power at retail prices and only incur short-  
977 run incremental customer handling costs below the "market clearing" level  
978 experienced by efficient alternative suppliers, the Company can recover these  
979 costs. When a utility company providing monopoly services, to which almost all

costs are assigned or allocated, also enters a competitive arena, it often uses the monopoly facilities as a foundation for additional activities and incremental cost assignment. Use of monopoly facilities allows the firm selling power to take advantage of being the single government approved provider of delivery services -- something no other firm can be. Therefore, if ComEd can sell at a market value that includes these billing and scheduling customer handling components, but it does not incur significant incremental costs for these items, it recovers the customer handling costs. To the extent that a retail market develops, the market price will clear at a level that includes the customer handling costs of an efficient ARES because, without the customer handling costs, power will not be sold.

Q. Describe the hypothetical example you present in City Exhibit 1.03 as a proof that ComEd can collect customer handling costs that are incurred by alternative suppliers but which the company does not incur because of its existing cost structure.

A. To demonstrate that ComEd recovers its targeted lost revenues, I have constructed a simple example where ComEd sells its power on a retail basis either through the PPO or into another service territory. The example demonstrates that while ComEd receives a lower transition charge due to the customer handling costs, it recovers these costs by selling at a market clearing price above its assigned short-run incremental cost.

1000 The hypothetical example shown on City Exhibit 1.03 uses an illustrative single  
1001 customer to illustrate how ComEd can recover its lost revenues. The example  
1002 begins by describing the components of existing base rates. Next, I demonstrate  
1003 the net amount of lost revenues that should be recovered in accordance with the  
1004 mitigation charge concept. In the third step, I show how the CTC would be  
1005 computed on the basis of retail value rather than wholesale costs. Finally, I  
1006 demonstrate that if ComEd does not incur "market clearing" levels of customer-  
1007 handling costs because of its government approved monopoly status, that the  
1008 Company will in fact recover the targeted amount of lost revenues.

1009 Q. In the example that you present in City Exhibit 1.03, is it possible for ComEd to  
1010 not achieve the targeted level of lost revenues if the Company sells power on a  
1011 wholesale basis to alternative suppliers?

1012 A. Yes, it is possible. If the Company can only sell power at wholesale prices or if  
1013 the company cannot sell into other service territories without incurring significant  
1014 incremental costs, it is possible the ComEd would not fully recover the targeted  
1015 lost revenues. However, even in this case, delivery service customers pay twice  
1016 for customer handling costs. In ComEd's case, when one foot (and most of one's  
1017 costs) is in a monopoly market, the risk of non-recovery for the foundation  
1018 investment is assumed by monopoly **ratepayers** who have no choice, and  
1019 competitors are disadvantaged by a government granted privilege, not by superior  
1020 market performance or more efficient cost control. Without reflecting competitor

1021 experienced customer handling costs in the market value credit, the benefits of  
1022 developing effective competitive markets may be lost.

1023 The possibility that ComEd will not fully recover its lost revenues and customers  
1024 will pay twice for customer handling items is inherent in the structure of  
1025 recovering uneconomic costs through a transition charge. In my opinion, the  
1026 basic dilemma can be best addressed by including items in the customer handling  
1027 costs where ComEd has the **opportunity** to recover the targeted level of lost  
1028 revenues.

1029 **G. BILL IMPACTS OF CUSTOMER HANDLING COSTS**

1030 Q. How does the adjustment for customer handling costs the electric bills of delivery  
1031 service customers?

1032 A. The table below illustrates impacts of the market value credit adjustments  
1033 presented in City Exhibit 1.02 on the hypothetical electric bills of customers using  
1034 the billing data presented in ComEd Exhibit 9.0. I have used a business customer  
1035 in the 800-1,000 kW usage class for illustrative purposes. The CTC is reduced by  
1036 the increase in market value credit and reduced by the lower delivery service  
1037 revenues. The table below summarizes the "before and after" impact of the

1038 customer handling costs that reflect retail market value rather than wholesale  
 1039 market value.

Bill Simulation for Customer in 800-1000 kW Class				
Figures in Cents per kWh				
	Customer Payments Under ComEd Proposed Rates	Customer Payments With Proposed Adjustments	Data Presented on ComEd Exhibit 9.0 Attachment H	
Delivery Charge	1.305	1.273	1.305	
Competitive Transition Charge	2.080	1.672	2.080	
Wholesale Mkt Value	2.690	2.690	2.690	
Customer Handling Costs	0.440	0.440	-	
Retail Market Value	3.130	3.130	2.690	
Total Bill in cents per kWh	6.515	6.075	6.075	
Base Rate	6.603	6.603	6.603	
<b>Savings</b>	<b>0.088</b>	<b>0.528</b>	<b>0.528</b>	
<b>Percent Savings</b>	<b>1.34%</b>	<b>8.00%</b>	<b>8.00%</b>	

1040 **H. CREDITS FOR THE SINGLE BILL OPTION**

1041 Q. Summarize ComEd's approach with respect to credits for the Single Bill Option in  
 1042 its SBO rider.

1043 A. ComEd's SBO rider is a tariff that implements the single bill option that was  
 1044 mandated in the Act. The rider applies to situations when alternative suppliers

1045 submit a single bill to customers that includes both delivery services and  
1046 generation services. As part of its SBO rider, ComEd proposes to develop a  
1047 "picture ready" bill for delivery services and the Company would submit this  
1048 picture ready bill to the supplier. In addition, ComEd agrees to remit a credit to  
1049 suppliers of 20 cents per bill. This credit is computed on the basis of "short run"  
1050 costs that can be avoided by ComEd from not performing billing activity --  
1051 primarily postage costs.

1052 Q. Do you address issues associated with information flows, processes or aspects of  
1053 ComEd's SBO rider other than the billing credit amount?

1054 A. No. My focus is on the dollar level of the billing credit. I only comment on other  
1055 provisions of the SBO tariff to the extent that these provisions influence the level  
1056 of the billing credit.

1057 Q. Is ComEd's proposal with respect to the level of the credit for in the SBO rider  
1058 reasonable?

1059 A. No. ComEd's proposal demonstrates why use of short-run avoided costs can  
1060 hinder development of competitive markets, over-recover costs for utilities and  
1061 force customers to pay more than necessary for services. Further, ComEd's  
1062 proposal allows the Company to have an inappropriate ability to affect the level of  
1063 the credit by "gold plating" the information provided to the billing suppliers, so

1064 that the Company will not avoid significant costs even when customers choose the  
1065 single bill option.

1066 Q. Explain how ComEd could experience different short-run avoided costs if the  
1067 Company had different requirements in its SBO rider.

1068 A. ComEd has proposed delivery charges with only two components other than the  
1069 transition charge -- a customer charge and a ratcheted demand charge. The  
1070 customer charge is fixed and does not change from month-to-month. The  
1071 ratcheted demand charge changes only if demand for the month exceeds the  
1072 highest of the previous twelve months demand. Given these two prices, it would  
1073 certainly be possible for a competitive supplier to compute delivery service bills  
1074 from ComEd's tariffs. If ComEd chooses to incur an additional cost by preparing  
1075 a picture ready copy of the bill and thereby reduces the short-run costs it avoids,  
1076 this decision should not increase costs to suppliers and ultimately to customers.  
1077 In other words, terms of the SBO rider allow ComEd to control the level of the  
1078 billing credit with its business decisions. Furthermore, if ComEd has chosen its  
1079 proposed arrangement to assure that its corporate logo still appears on every  
1080 customer bill, this should be considered a promotional activity and, again, should  
1081 not increase costs to customers.

1082 Q. Are there economics based reasons that use of short-run avoided costs is an  
1083 inappropriate policy for establishing billing credits?



1084 A. Yes. In the pro forma phase of this proceeding I explained why use of short-run  
1085 incremental cost for billing credits leads to results that are not efficient, fair and  
1086 impede the development of competitive markets. Besides being volatile and  
1087 difficult to verify, they produce results that can vary dramatically change from  
1088 customer to customer.

1089 Q. Is ComEd's approach consistent with the testimony of economics experts in the  
1090 pro-forma phase of this docket who are employed by National Economic  
1091 Research Associates (NERA)?

1092 A. No. In the pro-forma phase of this case, two witnesses from NERA, retained by  
1093 the utility companies, acknowledged that short-run incremental costs are not an  
1094 appropriate basis upon which to establish credits. ComEd witness Makhholm  
1095 testified that "The appropriate billing credit should be based on avoided costs,  
1096 *including joint and common costs.*" (ComEd Exhibit 7.0, at page 24, Docket No.  
1097 98-0680). Another NERA witness, Hethie Parmesano, testified "My  
1098 recommendation is to base the credits on the average avoided costs for the  
1099 expected number of customers choosing alternative suppliers, *not the short-run*  
1100 *decremental costs.*" (IP Exhibit 8.1, at page 10, Docket No. 98-0680). The  
1101 testimony of these two witnesses directly contradicts ComEd's approach suggests  
1102 that ComEd's cost basis must be modified in at least two important respects –

1103 allocation of joint and common costs and use of long-run rather than short-run  
1104 costs.

1105 Q. Is ComEd's proposal to use short-run avoided costs consistent with its costing  
1106 methodology in other areas of its cost support?

1107 A. No. When ComEd is collecting fees rather than remitting fees, ComEd allocates  
1108 labor costs in determining the fee even though the Company does not expect to  
1109 hire additional employees. For instance in ComEd Ex. 9.0, attachment H, the  
1110 calculation of DASR fees shows labor costs for "ARES account managers" at a  
1111 rate of \$35.86 per hour and "Bill Adjustment Clerks" at \$24.58 per hour.  
1112 However, ComEd has stated in its response to City Data Request 122: "At this  
1113 time, ComEd does not plan to hire and ARES account managers in 1999 or 2000."  
1114 I do not quarrel with adding labor costs in the DASR fee, even though no  
1115 incremental employees will be hired. However, I do believe ComEd must be  
1116 consistent and use a similar "long-run" approach in measuring credits associated  
1117 with the SBO rider.

1118 Q. What is the long run avoided cost presented by ComEd in its marginal cost-of-  
1119 service study?

1120 A. City Exhibit 1.04, Schedule 1 shows the billing cost per customer from ComEd's  
1121 marginal cost study. Column A shows the billing cost presented by ComEd,

Column B is the amount added to bring costs to 1999 levels and to include allocated administrative and general expenses. Column C is the number of customers by rate class and Column D is the marginal cost of billing per customer.

ComEd's marginal cost data on the cost of billing by rate class is summarized in the table below:

**Table 2**  
**ComEd's Proposed Billing Credit Compared to Marginal Cost**

Rate Class	ComEd Proposed Billing Credit	Marginal Cost per Customer using ComEd's Marginal Cost Study Data (Method suggested by NERA)
Watt Hour	\$.20	\$3.75
0-25 kW	.20	\$3.75
25-100 kW	.20	\$3.75
100-400 kW	.20	\$3.75
400-800 kW	.20	\$3.75
800-1,000 kW	.20	\$3.75
1,000-3,000 kW	.20	\$141.53
3,000-6,000 kW	.20	\$141.54
6,000-10,000 kW	.20	\$141.47
Over 10,000 kW	.20	\$141.52
Fixture Included Ltg	.20	\$3.75
Street Lighting Metered	.20	\$3.75
Street Lighting UnMtd	.20	\$3.75
Pumping	.20	\$3.75
Railways	.20	\$144.18

This table demonstrates that for usage classes below 1,000 kW, the billing credit proposed by ComEd is only 5.34% of the marginal billing cost, while for usage classes above 1,000 kW, the billing credit is a miniscule 0.14% of ComEd's marginal billing cost.

1135 Q. How does ComEd measure long-run marginal cost of billing?

1136 A. In theory, ComEd measures the change in customer billing costs when a customer  
1137 enters or exits its service territory. ComEd has used this method for more than a  
1138 decade and the approach supposedly captures costs that are avoidable in the long  
1139 run as the number of customers change.

1140 Q. Is that long-run avoided cost the same as the appropriate marginal cost for  
1141 purposes of measuring costs that change when delivery service customers choose  
1142 the single billing option?

1143 A. On a conceptual basis, the long-run costs that change "on the margin" when  
1144 delivery service customers choose the single billing option may differ from the  
1145 long-run costs that change when bundled customers leave the system. If all  
1146 bundled customers left the system, ComEd would not incur any billing costs.  
1147 However, if all customers became delivery service customers and selected the  
1148 single billing option, the Company might still incur some costs – e.g., those  
1149 related to monitoring accounts receivable from delivery services. But, the many  
1150 billing costs associated with preparing the bill, sending the bill, communicating  
1151 with customers, answering questions and maintaining customer records could be  
1152 avoided. These long-run avoidable costs are a better estimate of appropriate  
1153 billing credits, and they are much higher than the twenty-cent credit proposed by  
1154 ComEd.

1155 Q. What are the embedded costs of billing presented in ComEd's cost-of-service  
1156 studies?

1157 A. In its embedded cost study, ComEd "functionalized" its costs of billing along with  
1158 various other costs like meter reading and marketing. City Exhibit 1.04, Schedule  
1159 2 shows the embedded billing cost per customer as presented by ComEd. As  
1160 shown in the table below, the embedded billing cost per customer is similar to the  
1161 billing credit measured at marginal cost. Both are dramatically higher than the  
1162 credit proposed in ComEd's SBO rider.

1163  
1164

**Table 3**  
**ComEd's Embedded and Marginal Billing Cost**

Rate Class	Marginal Cost per	Embedded Cost per
	Customer from	Customer from
	ComEd's Marginal Cost	ComEd's Embedded
	Study (Method	Cost Study (Method
	suggested by NERA)	suggested by Staff)
Watt Hour	\$3.75	\$3.76
0-25 kW	\$3.75	\$3.76
25-100 kW	\$3.75	\$3.76
100-400 kW	\$3.75	\$3.76
400-800 kW	\$3.75	\$3.76
800-1,000 kW	\$3.75	\$3.76
1,000-3,000 kW	\$141.53	\$142.22
3,000-6,000 kW	\$141.54	\$142.22
6,000-10,000 kW	\$141.47	\$142.22
Over 10,000 kW	\$141.52	\$142.22
Fixture Included Ltg	\$3.75	\$7.26
Street Lighting	\$3.75	\$4.26
Street Lighting UnMtd	\$3.75	\$3.76
Pumping	\$3.75	\$3.76
Railways	\$144.18	\$144.88

1165

1166 In the pro-forma phase of this proceeding a number of witnesses, including the  
1167 ICC Staff, explained that embedded cost is a reasonable basis for computing

1168 billing credits. Embedded costs offer objectivity of data and put ComEd on a  
1169 "level playing field" by removing the unique support of ComEd's monopoly  
1170 ratepayer funded customers. If embedded costs are used, and the price is  
1171 unbundled, a billing credit is unnecessary and customers not taking ComEd's  
1172 billing service would simply not pay the cost of service. However, as with long-  
1173 run marginal cost, the issue of whether ComEd's measured embedded billing cost  
1174 includes the relevant cost categories for this purpose should be addressed to refine  
1175 the quantity. In particular, there may be some monitoring costs of accounts  
1176 receivable that should not be part of a billing credit.

1177 Q. How does ComEd's credit compare to credits established in Pennsylvania and  
1178 California?

1179 A. Billing credits have been established to implement policies similar to the single  
1180 bill option in California and Pennsylvania. In California, the credits were  
1181 determined using long-run marginal cost. The table below illustrates the billing  
1182 credit for one of the companies in each of these states as compared to ComEd's  
1183 billing credit. Other utility companies in these two states had reasonably similar  
1184 levels of billing credits.

1185 **Table 4**  
1186 **ComEd's Proposed Billing Credit Compared with Other States**

Rate Class	ComEd proposed	Credit for Billing	Credit for Billing
	Billing Credit in Rider	Implemented by	Implemented by
	SBO	Metropolitan Edison	Southern California Edison Company
Watt Hour	\$ .20	\$4.27	\$1.40
0-25 kW	.20	4.27	1.40
25-100 kW	.20	4.27	2.11
100-400 kW	.20	15.75	2.11
400-800 kW	.20	15.75	13.57
800-1,000 kW	.20	15.75	13.57
1,000-3,000 kW	.20	20.86	13.57
3,000-6,000 kW	.20	20.86	13.57
6,000-10,000 kW	.20	162.15	13.57
Over 10,000 kW	.20	162.15	13.57

1187 Q. If the much higher level of billing credits that have been adopted in other states is  
1188 applied to ComEd, isn't there a risk that the Company will not fully recover its  
1189 costs?

1190 A. If the only objective is to minimize the chance that ComEd will not recover some  
1191 amount of its costs, the billing credit should indeed be set at a very low level. If  
1192 one objective is to allow ComEd a reasonable opportunity to recover costs so long  
1193 as the Company acts in an efficient and prudent manner, then use of long-run  
1194 marginal cost or embedded costs allows ComEd that opportunity. Of course, if  
1195 the company chooses to implement extraordinary procedures such as the picture-  
1196 ready delivery service bill, ComEd may not capitalize on the opportunity to  
1197 recover its reasonable and prudent costs.

1198 Q. What is your recommendation with respect to the Single Bill Option?

1199 A. Given the similarity between marginal costs and embedded costs, the credits  
1200 should be derived from ComEd's embedded cost study. The embedded cost  
1201 amount is somewhat easier to verify, and it implies that the billing credit is the  
1202 same amount as ComEd charges for the service. We have requested ComEd to  
1203 provide the amount of cost that the Company would experience if it only  
1204 monitored delivery service accounts receivable. This amount would allow us to  
1205 adjust the embedded cost downward. Unfortunately, ComEd has not been able to  
1206 provide this information. For purposes of this proceeding, I recommend that in  
1207 the absence of more data from ComEd, the Commission use fifty percent of  
1208 ComEd's embedded cost.

1209 Q. Do you agree with ComEd witness Makhholm that the Company's proposal  
1210 eliminates "subsidies" to competitors and "props-up competitors?"

1211 A. No. To the contrary, ComEd's approach appears focused on maximizing revenues  
1212 for the utility company with little regard for development of competitive markets  
1213 or lowering prices for customers. If long-run marginal costs or embedded costs  
1214 are not used in establishing the credit, ComEd's approach amounts to insulating  
1215 the Company from the risk that customers might chose another supplier. ComEd  
1216 witness Makhholm acknowledges that true marginal cost is "a price based on the  
1217 costs that would be incurred by an entrant into the market, entering at today's  
1218 prices for inputs and using today's technology." (ComEd Ex. 11.0, at page 6.)  
1219 Setting credits below this level, as in ComEd's proposal, results in a subsidy for



1220 the utility company rather than the competitor. Attempting to frame the argument  
1221 in terms of subsidized entry rather than in protecting the utility company is simply  
1222 not accurate.

1223 Q. Do you agree with NERA witnesses that low billing credits are justified because  
1224 of significant economies of scale that exist in billing?

1225 A. No. The NERA argument is that one company can offer these services at a lower  
1226 cost than multiple companies. However, the NERA witnesses present no  
1227 evidence of economies of scale and they ignore entirely the value of development  
1228 of competitive markets. If the economies of scale argument is taken seriously,  
1229 then a single company should prepare all electric and gas bills for the whole State  
1230 (if not the whole country). The NERA witnesses' narrow utility company focus  
1231 also excludes possible economies of scale from the perspective of alternative  
1232 suppliers who prepare bills for the generation component of electricity.

1233 If there is any validity to the economies of scale argument at all, the proposition  
1234 must be demonstrated on an empirical basis. Although I have not developed a  
1235 comprehensive study, I have reviewed the costs for different sized companies in  
1236 Illinois. If the NERA proposition is correct, the billing cost per customer for  
1237 larger companies (i.e. ComEd) should be much lower than the billing cost for  
1238 small companies. I have reviewed historical data on the cost per customer of  
1239 various customer-handling expenses for ComEd, Illinois Power, CIPS and

1240 CILCO. In fact, the cost data does not demonstrate the presence of economies of  
1241 scale.

1242 **V. COST-OF-SERVICE STUDY ISSUES**

1243 **A. INTRODUCTION**

1244 Q. How have you organized the cost-of-service section of your testimony?

1245 A. In discussing ComEd's proposed cost-of-service, I first describe general principles  
1246 of economic efficiency with respect to cost-of-service studies. Next, I comment  
1247 on certain general aspects and specific components of the marginal cost study  
1248 proposed by ComEd in this case. Third, I discuss some specific items in ComEd's  
1249 cost-of-service study. Finally, I comment on how marginal cost principles can be  
1250 used to implement a set of efficient rates.

1251 **B. THEORY OF ALLOCATION OF RESOURCES AND MARGINAL COST**

1252 Q. Describe the theoretical reasons for using a marginal cost of service study rather  
1253 than an embedded cost study to guide prices that are set by regulatory agencies.

1254 A. The general theory is that economic efficiency is increased because consumers  
1255 will react to prices in a manner that efficiently allocates resources. The reference

1256 to Alfred Kahn made by ComEd witness Makhholm summarizes the principal  
1257 argument for an economic efficiency benefit of marginal cost:

1258 "But why does economic efficiency require prices to equal marginal,  
1259 instead of, for example, average total costs? The reason is that demand for  
1260 all goods and services is in some degree, at some point, responsive to  
1261 price. Then, if consumers are to decide intelligently whether to take  
1262 somewhat more or somewhat less of any particular item, the price they  
1263 have to pay for it (and the prices of all other goods and services with  
1264 which they compare it) must reflect the cost of supplying somewhat more  
1265 or somewhat less -- in short, marginal opportunity costs."

1266  
1267 The fundamental arguments for attempting to set prices at marginal cost remain  
1268 laudable. The issues are how to implement marginal costs practically and how to  
1269 measure marginal costs for distribution.

1270 Q. What are the implications of marginal cost theory with respect to distribution  
1271 costs?

1272 A. A fundamental premise of Alfred Kahn's above description of the benefits of  
1273 marginal costs is that prices must affect choices made by customers so that  
1274 resource allocations are impacted. If prices do not affect consumer choices, the  
1275 efficiency arguments of marginal cost pricing are not relevant. In the context of  
1276 ComEd's tariff proposals, this means that marginal cost pricing is most relevant in  
1277 situations where the Company or customers are making new investments. The  
1278 implication is that pricing is most important in situations where customers are  
1279 constructing new facilities and/or where ComEd is making new distribution  
1280 investments.

1281 The second major point is respecting marginal cost theory in the context of  
1282 distribution costs is that both costs and units of consumption must be variables for  
1283 marginal cost to have any relevance for efficient resource allocation. If costs do  
1284 not change as the economic activity changes, or if the activity defined as a unit of  
1285 consumption does not vary, there is no marginal cost. The most prominent  
1286 example of this in ComEd's marginal cost study is the mislabeling of the cost of  
1287 new meters as a marginal cost for customers using in-place facilities and then  
1288 using this result as the basis for a customer charge. Unless new meters are  
1289 installed, no change occurs in ComEd's cost. If there are no new customers, no  
1290 investment decision is prompted by the absent economic activity. In neither case  
1291 is there a marginal cost. Applying the cost of a new meters to existing customers  
1292 has no relevance from a resource allocation perspective. Concocting a marginal  
1293 cost in this context will not advance economic efficiency.

#### 1294 **C. COMED'S APPROACH TO MEASURING MARGINAL COSTS**

1295 Q. How do you characterize ComEd's marginal cost study of distribution?

1296 A. While the cost study includes many detailed analysis of costs for various customer  
1297 classes, it is not a marginal cost study that considers resource allocation. The  
1298 study approximates ComEd's existing physical system through classifying  
1299 customers by density and then re-prices the existing system at current costs.  
1300 Because it measures existing assets at current replacement costs, ComEd's study

1301 could be described more accurately as an embedded cost study adjusted to current  
1302 prices than a marginal cost study. In contrast, a true marginal cost study would  
1303 clearly define uses of economic resources by ComEd (e.g., distribution  
1304 expansion) and those consumption activities that cause the Company to make  
1305 incremental investments.

1306 Q. What elements of marginal distribution cost are missing from ComEd's cost  
1307 study.

1308 A. A marginal cost of distribution study should reflect efficient the cost of expanding  
1309 the distribution system, given its current configuration that are driven by changes  
1310 in consumption of electricity. Although ComEd has performed such analyses in  
1311 the past, the study presented in this proceeding does not quantify "marginal  
1312 costs." In this regard, the cost study should incorporate indicators from the so  
1313 called "seven factor test" including the fact that "local distribution facilities are  
1314 normally in close proximity to retail customers" and "power entering a local  
1315 distribution system is consumed in a relatively restricted geographical area."  
1316 ComEd's cost of service study does not account for the fundamental element of  
1317 electric distribution system that planning occurs for smaller regions than the  
1318 whole system.

1319 Q. How is the marginal cost of distribution study presented by ComEd inconsistent  
1320 with other analyses developed by the Company to support rate proposals?

1321 A. As noted in ComEd Exhibit 9.0, the study presented in this case is typical of the  
1322 Company's past rate case presentations. However, ComEd has used different and  
1323 more appropriate methods of analysis for its economic development rates and its  
1324 contract service rates. The analysis ComEd developed to support its Rider 19 --  
1325 industrial development -- applied more correctly the relevant principles of  
1326 marginal cost for its distribution in terms of investment costs on a regional basis.  
1327 That analysis was consistent with the manner in which ComEd actually incurs  
1328 costs as it adds load to its distribution system, it recognized the planning and cost  
1329 causation characteristics of the distribution (i.e., regional coincident loads), and it  
1330 applied marginal cost theory appropriately. ComEd's Rider 19 analysis  
1331 recognized the local/regional nature of distribution systems -- that they can vary  
1332 across relatively small geographic areas, that planning and construction of  
1333 distribution facilities is locally focused, non system-wide, and that in some  
1334 situations the costs of an incremental unit of consumption could actually be zero.  
1335 Rider 19 differentiated ComEd's rates on an area-by-area basis as a function of  
1336 regional load growth and substation capacity.

1337 In developing its CS rates, ComEd was required to demonstrate that its prices  
1338 were above marginal cost. I understand that ComEd assumes the marginal cost of  
1339 distribution is zero for purposes of this CS rate evaluation. In three different  
1340 situations, the Company has developed three very different approaches to the  
1341 measurement of marginal distribution cost.

1342 Q. Given the problems with ComEd's marginal cost study, do you advocate  
1343 abandoning the study entirely and adopting embedded cost?

1344 A. No. Even if the details of ComEd's marginal cost study are questionable, very  
1345 positive principles can be derived from marginal cost concepts. Further, ComEd's  
1346 marginal cost study is more precise than its embedded cost study. First,  
1347 customers whose decisions cause ComEd to build new facilities should have price  
1348 signals that reflect those marginal costs -- this includes costs for new meters and  
1349 service drops. Second, rate policies such as ComEd's industrial development rider  
1350 that differentiate prices according to whether areas have surplus or constrained  
1351 distribution capacity do indeed promote efficiency and should be encouraged.

1352 Q. Given problems with ComEd's marginal cost study, do you recommend using the  
1353 embedded study presented by the Company instead?

1354 A. No. Despite conceptual problems, ComEd's marginal cost study in many respects  
1355 is a more carefully defines costs by customer class than its embedded cost study.  
1356 Costs of transformers and secondary wires are distinguished from other  
1357 distribution facilities on a class-by-class basis in the marginal cost study while the  
1358 embedded cost study allocates aggregate accounting costs using relatively gross  
1359 measures. The marginal cost study attempts to define specific equipment used by  
1360 specific customers while the embedded study allocates gross accounting costs on

1361 an aggregate basis using factors such as coincident peak load. For example, the  
1362 embedded cost study incorrectly attributed transformer costs to the railroad class  
1363 even though the CTA or the City owns all of the transformation equipment.

1364 Q. By suggesting that ComEd's marginal cost of service study is developed in a more  
1365 detailed manner than its embedded cost study, are you implying that ComEd's  
1366 cost study is sound in all respects?

1367 A. No. In ComEd's last rate case the City pointed out significant errors in ComEd's  
1368 cost estimation procedures relating to measurement of density areas and in the  
1369 measurement of costs incurred for underground and overhead lined in the various  
1370 density areas. ComEd has not presented evidence that it corrected these errors.  
1371 Further, I understand that cross examination in the re-functionalization case by the  
1372 City demonstrated that within the above 10 MW customer class, ComEd attributes  
1373 more distribution costs on a monthly basis to some very large customers, such as  
1374 Fermi Lab, than the cumulative total distribution investment required to serve  
1375 those customers. By noting that ComEd's marginal cost study has some aspects  
1376 that are more carefully defined than the embedded cost study, I am not agreeing  
1377 that ComEd's marginal cost study is appropriate in all respects.

1378 **D. MARGINAL COSTS AND NEW CONSTRUCTION**

1379 Q. Elaborate on your recommendation that customers who construct new facilities  
1380 should be receive price signals at marginal cost.



1381 A. My recommendation has two different implications. **First**, customers whose  
1382 economic consumption decisions compel the utility to build new facilities should  
1383 incur prices that reflect a marginal cost differential for the metering equipment  
1384 and service drops relative to existing customers. This assures that customers will  
1385 make resource decisions (i.e. location and the use of existing facilities versus new  
1386 installations) on the basis of true economic costs. On the other hand, the  
1387 maximum level of marginal cost assessed to customers who are simply  
1388 maintaining service at a location or connecting using in-place facilities should be  
1389 the carrying charge associated with eventually replacing the meter and the service  
1390 drop and maintaining customer accounts. Simply stated, customers installing new  
1391 facilities should face prices that are higher than existing customers by the amount  
1392 of marginal cost.

1393 **Second**, to the extent that construction of new customer facilities causes ComEd  
1394 to incur added distribution costs (depending on the distribution capacity status of  
1395 the region) the customers' charges should also reflect marginal costs. ComEd  
1396 recognized this concept in a data request response: "For a system with excess  
1397 distribution capacity short-run marginal cost could be more relevant than long-run  
1398 marginal costs. For a system without excess capacity, long-run incremental cost,  
1399 which includes the costs of creating the distribution system, could be more  
1400 relevant." (Data request response number 34). Since ComEd's marginal costs are  
1401 33% higher than its embedded costs, the higher revenues from the customers

1402 cause construction of new facilities should lower the revenue requirement for  
1403 customers who do not have cost causing consumption.

1404 Q. Is your recommendation consistent with the definition of marginal cost presented  
1405 by ComEd?

1406 A. Yes. ComEd witness Makholm defines marginal cost as follows:

1407 "Marginal cost is the amount of **additional expenditure** that would be  
1408 necessary to provide **an additional unit of a good or service**. It is the  
1409 cost of **an additional unit** of output... Avoided costs are the amount of  
1410 savings that can be achieved by **producing less of a particular good or**  
1411 **service.**" (ComEd Ex. 11.0, at page 5, (emphasis added)).

1412 Further, in data request response No. 34, ComEd stated that the

1413 "marginal cost of production" is "marginal cost of a kWh delivered,  
1414 marginal cost of a **distribution expansion**, [or] marginal cost of providing  
1415 service to a **new customer**."  
1416

1417 ComEd's marginal cost study incorrectly assumes that customers who are simply  
1418 continuing their use of existing facilities or re-using in-place facilities are a "unit  
1419 of consumption" for purposes of measuring marginal cost. However, using the  
1420 definition provided by its own witness Makholm, such customers are not  
1421 "additional units", nor can an existing customer be equated with any "good"  
1422 produced by ComEd. Furthermore, no "additional expenditure" is actually  
1423 incurred by ComEd for new meters or new service drops. On the other hand, the  
1424 demand (kW) and usage (kWh) billing determinants represent units that actually

1425 are consumed by customers and produced by ComEd. Changes in these billing  
1426 determinants cause ComEd to experience various types of cost. Only in cases  
1427 where customers cause ComEd to construct new facilities are "additional  
1428 consumption units" consisting of new meters and service drops "produced" by  
1429 ComEd. In sum, attributing meter and service drop costs to existing customers is  
1430 a remnant of ComEd's embedded cost policies from the 1970's and should not be  
1431 perpetuated.

1432 Q. Are there particular reasons that ComEd should change its long-standing policy of  
1433 over-estimating costs attributable to existing customers at this time?

1434

1435 A. Yes. The movement towards competition implies a policy with increased  
1436 emphasis on economic efficiency and less importance on issues such as universal  
1437 service and "rate averaging" across a class. The debate about new customers  
1438 paying full marginal cost has been discussed many times in the past, but ComEd  
1439 simply defends its prior positions. For example, in responding to data request  
1440 number 43, ComEd states that "marginal costs are not determined on the basis of  
1441 a unit of consumption." This statement clearly conflicts with the most basic  
1442 definitions of marginal cost -- if there is no unit of consumption there are no  
1443 resources to allocate. If ComEd is serious about advocating marginal cost, this is  
1444 an obvious part of the rate design that should be changed.

1445 Q. Given the accelerated time frame in this case and the multitude of other issues, do  
1446 you recommend that ComEd change its policy for newly constructed facilities as a  
1447 part of delivery tariffs in this case.

1448 A. That would be desirable, but I recognize that the required change would be  
1449 complex. The change that would implement different prices for customers that  
1450 require new facilities to be constructed would have significant impacts on  
1451 residential customers, and would be complex. I recommend that ComEd's tariffs  
1452 that will be established when residential customers receive direct access should  
1453 reflect marginal customer and distribution costs for newly constructed facilities.  
1454 Further, as part of that case, mechanisms should be developed to provide existing  
1455 customers with the full benefits of the increased revenues from customers who  
1456 construct new facilities.

1457 **E. CARRYING CHARGES IN COMED'S COST OF SERVICE STUDY**

1458 Q. How does ComEd compute the annual carrying charges on investment for  
1459 purposes of its marginal cost study?

1460 A. ComEd multiplies the current cost of its facilities by a carrying charge factor that  
1461 converts investment costs into annual required "marginal cost prices." The  
1462 carrying charge factors also account for taxes and different useful lives of  
1463 different types of investment. Theoretically, the carrying charge also includes a

1464 return on equity and other adjustments that assure that prices based on the costs  
1465 developed will produce appropriate return levels.

1466 Q. Does ComEd correctly measure its annual level premium carrying charge  
1467 ("ALPCC") factors in its marginal cost of service study?

1468 A. No. ComEd's ALPCC is derived from a "nominal" cost of capital -- one that  
1469 implicitly includes a component for expected inflation. ComEd multiplies this  
1470 nominal carrying charge by plant investment re-priced at current price levels.  
1471 This calculation accounts for inflation twice -- once in the carrying charge, and  
1472 again by using current price levels in measuring plant value. Problems with the  
1473 method of multiplying nominal discount rates by current prices have been noted  
1474 by noble prize winning economist William Vickery:

1475 "In a context of inflation, conventional methods of accounting and rate of  
1476 return result in a front-end loading of costs that is at odds with efficient  
1477 pricing....A treatment more in line with efficient pricing would be to ...  
1478 combine real depreciation ... with real interest ..."<sup>1</sup>

1479 Dr. Vickery continues by observing that methods of multiplying nominal cost of  
1480 capital by current prices like the method used by ComEd "result in serious  
1481 distortion."

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<sup>1</sup> Vickery, William, "Efficient Pricing of Electric Power Service". Resources and Energy 14. 1992. North Holland

1482 Q. Do other states that use marginal cost of service studies use real rather than  
1483 nominal carrying charges?

1484 A. Yes. I understand that in Wisconsin, a real rather than a nominal carrying charge  
1485 is applied to the current cost of investments.

1486 Q. Can you demonstrate the specific impact of ComEd's method of using a nominal  
1487 cost of capital applied to investment measured at current prices?

1488 A. Yes. I have used the ALPCC of 11.27% that ComEd applies to distribution plant  
1489 to demonstrate the impacts of double counting for inflation. I test ComEd's  
1490 method by checking whether the target return on equity in the carrying charge  
1491 factor equates to the actual return on equity if expected inflation implicit in  
1492 ComEd's nominal cost of capital is the same as actual inflation. My analysis is  
1493 demonstrated on City Exhibit 1.05. Schedule 1 of the exhibit is a replication of  
1494 ComEd's carrying charge. Schedule 2 of the City Exhibit 1.05 shows that if  
1495 ComEd's carrying charge is used (with consistent interest rates) and no future  
1496 inflation is assumed, the target return on equity of 12% is achieved. Schedule 3  
1497 shows that if the actual inflation rate is the same as the expected inflation rate,  
1498 then the earned return is 16.5% rather than the target of 12%. Schedule 4 shows  
1499 that if the carrying charge factor is based on real rather than nominal costs of  
1500 capital, and if expected inflation is equivalent to actual inflation, then the target  
1501 rate of return on equity is equivalent to the achieved return on equity.

1502 Q. What is your specific recommendation in this case.

1503 A. Given that correction of the ALPCC in this case would require substantial  
1504 additional work by ComEd, I recommend first that the Company correct this error  
1505 in future proceedings. In particular, it should be corrected in ComEd's delivery  
1506 service tariff filing for the next -- residential -- phase of the transition. Second,  
1507 for purposes of computing rental charges as a part of Rider 6 or Rider 7, ComEd  
1508 should incorporate the correct level of carrying charges immediately.

1509 **VII. RATE DESIGN ISSUES**

1510 **A. RATCHETED DEMAND CHARGES**

1511 Q. Describe the mechanics of how ComEd proposes to set demands for purposes of  
1512 the delivery service tariffs in relation to the manner in which current rates are  
1513 determined.

1514 A. Currently demand charges are set from the average of the three highest use half-  
1515 hour periods that a customer incurs in any month. However, ComEd's proposed  
1516 delivery charges would be applied on a monthly basis to the highest half-hour use  
1517 in the past twelve months. Setting demand on the basis of maximum usage  
1518 reached in a twelve-month period is known as a ratchet. In general, this approach

1519 penalizes customers that have variability in their month to month usage.  
1520 Consumers' charges are ratcheted to a higher level whenever previous demand  
1521 peaks are exceeded, and later or ordinary usage patterns cannot moderate the  
1522 increase. The approach favors customers who use relatively level amounts of  
1523 electricity over the course of a year. For example, a facility that uses energy on a  
1524 seasonal basis will have variable peak demands while facilities that use energy as  
1525 part of a manufacturing process will have relatively stable peak demands.

1526 The ratcheting approach makes customer bills potentially very sensitive to factors  
1527 that are unusual or beyond customer control, like the weather in a single month.  
1528 For example, if a peak level of use occurs on a very hot day, this will drive the  
1529 level of customer bills for the entire year. In cases where customers do not have  
1530 time of use meters, the ratcheted demand could even occur during off peak  
1531 periods. The impact of ratcheting is illustrated in ComEd's marginal cost study.  
1532 For five out of the ten classes, the highest demand for the entire class does not  
1533 occur in the summer peak period which normally drives distribution expansion  
1534 costs. For the railroad class, the highest demand occurs in March -- a level that is  
1535 25% higher than the July peak and 21% higher than the August peak.

1536 Q. What rationale does the Company use for changing its approach for measuring  
1537 demand?



1538 A. On page 15 of ComEd Exhibit 12.0, the Company states that using the most  
1539 recent 12 month period more closely matches the charges paid by the retail  
1540 customer to the fixed nature of the costs ComEd incurs to provide distribution  
1541 services. In response to a Staff data request, ComEd states the "distribution  
1542 facilities are sized to meet non-coincident loads of retail customers."

1543 Q. Is ComEd's rationale consistent with its cost of service study and actual  
1544 distribution planning practice?

1545 A. No. First, the cost study. On page 10 of ComEd Exhibit 9.1, the Company splits  
1546 its distribution costs into two portions -- costs driven by load that is coincident  
1547 with the system peak, and costs driven by aggregate customer class load that is  
1548 not coincident with the system peak. For all customers classes where ComEd  
1549 separately measures costs associated with customer specific load and costs  
1550 associated with overall levels of demand for the customer class, the distribution  
1551 cost associated with the general class level of load (i.e. the coincident peak) is far  
1552 higher than the customer specific non-coincident portion. This contradicts  
1553 ComEd's statement that non-coincident loads drive distribution costs.

1554 Second, the practical implications of ComEd's ratcheting proposal. As noted  
1555 earlier, ComEd's cost of service study does not recognize the very regional nature  
1556 of decisions to invest in distribution facilities. The implicit assumption behind the  
1557 statement that distribution facilities are built to meet non-coincident loads of

1558 individual customers is that the distribution system does not benefit from diversity  
1559 in load. However, in distribution planning, ComEd's costs of the 34 kV lines, the  
1560 distribution substations, the primary wires and the primary tap are driven by  
1561 regional coincident load. Diversity in regional load allows the incremental level  
1562 of investment to be reduced.

1563 The only costs that are obviously sized for the needs of a single customer are the  
1564 transformer, the secondary wires and the service drop. However, ComEd's study  
1565 assumes that these facilities are driven by the behavior of the geographically  
1566 dispersed class as a whole. In sum, ComEd's confusing and sometimes  
1567 contradictory mix of rationalizations does not justify a change in rate design of  
1568 this magnitude.

1569 Q. Have other economists commented on problems with ratcheted demand charges.

1570 A. Yes. William Vickery, who I referred to above, and who was a strong advocate of  
1571 marginal cost pricing commented on demand ratchets as follows:

1572 "At these [ratcheted] charges it often pays the customer to engage in costly  
1573 load control programs, without there being any reassurance that the  
1574 reduction in load will occur during the system peak and lower the utility's  
1575 costs to any comparable extent. Ratcheting appears to be more of a way  
1576 of preserving utility revenues in the event of a business downturn at the  
1577 expense of customers ..."<sup>2</sup>

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<sup>2</sup> Vickery, William, "Efficient Pricing of Electric Power Service". Resources and Energy 14. 1992. North Holland.

1578 ComEd's rate design does not send useful price signals to consumers, blunting the  
1579 theoretical premise of economic efficiency.

1580 Q. Have you quantified how much customers would pay in ratcheted demand that is  
1581 unrelated to coincident demand that causes ComEd to incur distribution expansion  
1582 costs associated with the primary system, substations and other equipment that is  
1583 not driven by customer specific loads?

1584 A. Yes. Assuming that most of ComEd's distribution costs are driven by coincident  
1585 peak demand as its study indicates, The table below compares loads that drive  
1586 ComEd's distribution expansion (i.e. the coincident peak) with the ratcheted  
1587 demand. For most rate classes, putting aside problems with using class peak  
1588 rather than regional peak, customers would pay a high percentage of their demand  
1589 charge that is not associated at all with the driver of ComEd's distribution cost.  
1590 The table uses data from ComEd Exhibit 9.1, page 39.

1591 **Table 5**  
1592 **Ratcheted Demand versus Coincident Demand**  
1593

<i>Rate Class</i>	<i>Coincident Demand (MW)</i>	<i>Ratcheted Demand (MW)</i>	<i>Percent Ratcheted Above Coincident</i>
0-25 kW	701.2	1,235.5	76.20%
25-100 kW	1,479.9	2,233.9	50.95%
100-400 kW	1,881.8	2,856.5	51.80%
400-800 kW	1,202.9	1957.9	62.77%
800-1,000 kW	374.3	563.8	50.62%

1,000-3,000 kW	1,632.6	2,215.9	35.73%
3,000-6,000 kW	913.2	1,193.7	30.72%
6,000-10,000 kW	473.0	568.66	22.97%
Over 10,000 kW	1,268.1	1,923.06	51.65%
Railroad	60.7	141.61	133.29%

1594 Q. What is your recommendation with respect to ratcheted demand charges?

1595 A. For customers constructing new facilities or adding to facilities, where ComEd  
1596 experiences specific incremental expenditures for installing equipment, the  
1597 Company could develop separate rates that are tied to the maximum size of the  
1598 customers load. However, for all other customers, ComEd should base the  
1599 demand charge on the monthly level of demands consistent with its past practice.  
1600 While this method is not perfect, it is a more reasonable representation of the cost  
1601 causation pressures that the Company experiences for the various factors that  
1602 drive the cost of distribution expansion.

1603 **B. DEMAND BASED CHARGES**

1604 Q. ComEd did not include a usage based charge in its rate RCDS. Except for the  
1605 customer charge, the entire price is determined by the level of demand. How does  
1606 this form of pricing impact various customers?

1607 A. Because the entire price in the delivery charge other than the customer charge is  
1608 derived from levels of demand, low load factor customers such as high rise  
1609 buildings without space heat pay significantly higher average delivery rates per  
1610 kWh of usage than high load factor customers.

1611 Q. What are some of the implicit assumptions behind basing the entire non-customer  
1612 cost portion of the delivery price on the basis of demand?

1613 A. The major implicit assumption is that a customer who very rarely uses energy will  
1614 cause ComEd to incur the same marginal distribution costs as a customer who  
1615 uses energy on a continual basis throughout the year. One implication of the  
1616 assumption is that all energy used except energy used at peak half-hour is a "by-  
1617 product" of peak usage and that the "by-product" has no cost. Another  
1618 implication is that ComEd would construct precisely the same system -- the same  
1619 voltage levels, the same substations etc. -- and experience the same line losses if  
1620 all of its customers had very low load factors as it would build if all of its  
1621 customers had 100% load factors. A third implication of the assumption is that  
1622 there is no tradeoff between distribution line loss and distribution capital cost.

1623 Historically, in measuring marginal generation cost, the Commission has used the  
1624 cost of the least expensive type of capacity for demand costs while the marginal  
1625 rather than the average fuel cost is used to measure usage costs. This approach  
1626 accounts for the fact that the system that is constructed is partially a function of

1627 the differing mix of customer characteristics. For example, if only high load  
1628 factor customers existed, a "base load" system with higher capital costs and lower  
1629 fuel costs would be a better basis for the cost study. The approach recognizes that  
1630 the full cost of actual capacity related to base load plants is not only driven by  
1631 peak load usage. In terms of the distribution system, the mix of facilities to a  
1632 certain extent depends on usage as well as demand. For example, if the system  
1633 served only very low load factor customers, economics might suggest that ComEd  
1634 accept a higher level of line loss relative to capital cost. If a tradeoff between line  
1635 loss and capital cost exists, some of the distribution cost should theoretically be  
1636 allocated on the basis of energy usage rather than demand.

1637 Q. Does ComEd acknowledge that energy usage affects the type of distribution  
1638 facilities that it constructs?

1639 A. Yes. In response to the City's Data Request 115, the Company acknowledged that  
1640 distribution investments are driven by "load factor of a customer's load (e.g. the  
1641 load factor of a customer's load may impact transformer rating and sizing due to  
1642 thermal considerations associated with different heating and cooling effects on a  
1643 transformer resulting from load factor considerations)." In response to City Data  
1644 Request 95, ComEd states that in constructing new distribution facilities, ComEd  
1645 considers the expected line loadings on the equipment.

1646 Q. Are other components of delivery service costs more related to energy usage than  
1647 to demand?

1648 A. Yes. To the extent that marketing expenses, call center costs, safety  
1649 advertisements and reliability information is allowed in delivery charge revenue  
1650 requirements, these costs are probably more related to usage than demand.  
1651 Certain operation and maintenance costs such as transportation cost and  
1652 communication costs are also not obviously driven only by the peak demand  
1653 level.

1654 Q. Given that some distribution costs are arguably usage rather than demand related,  
1655 do you have a specific recommendation in the context of ComEd's marginal cost  
1656 study?

1657 A. Yes. I recognize that quantifying the amount of distribution cost that is related to  
1658 usage rather than demand is a complex exercise. However, as a reasonable to  
1659 ComEd's complete lack of recognition of usage related costs, I suggest allocation  
1660 on half of the distribution operation and maintenance that ComEd attributes to  
1661 non-coincident peak on the basis of usage. The dollar amount of operation and  
1662 maintenance ComEd attributes to each class except the very large customers is  
1663 \$14.40 per kW/year. Therefore, on a monthly basis this approach only allocates  
1664 \$0.60 per kW/month to usage.

1665

1666

### C. NON-FIRM DELIVERY CHARGES

1667 Q. Does ComEd include a provision for non-firm service in its delivery service  
1668 tariffs?

1669

1670 A. No. ComEd states that "For purposes of delivering electric power and energy to  
1671 customers, the Company's costs are generally not affected by whether the electric  
1672 power and energy delivered are provided on a firm [or] non-firm basis...For that  
1673 reason, there was no need in the marginal cost study to have interruptible  
1674 ...customer classes" (ComEd Exhibit 9.0 at page 12).

1675

1676 Q. Is ComEd's explanation that non-firm delivery charges are inappropriate  
1677 consistent with its marginal cost analysis?

1678

1679 A. No. ComEd maintains that the reason that the majority of delivery charges should  
1680 be demand based is that most distribution costs are driven by demand on the  
1681 system at a single point in time. If customers can be interrupted at the time peaks  
1682 occur on the system, the customers do not cause distribution expansion costs to be  
1683 incurred on ComEd's system. On the other hand, if non-firm customers truly do  
1684 not cause ComEd to avoid distribution expansion costs, the marginal distribution  
1685 cost driven by demand is zero. The lack of a non-firm delivery service tariff can  
1686 be particularly costly in combination with the ratcheting feature. Consider a



1687 customer generally uses power during off-peak periods but occasionally may use  
1688 during the daytime, and is willing to interrupt. This customer does not cause cost  
1689 pressure on ComEd to expand primary distribution facilities.

1690 **D. CUSTOMER CHARGES FOR INTERVAL METERS**

1691 Q. What is your understanding of ComEd's proposal with respect to requiring  
1692 interval meters for customers?

1693 A. ComEd requires that customers with a peak demand of more than 100 kW install  
1694 interval meters. According to ComEd, this increases the cost of metering to  
1695 customers by about \$85.80 per year (ComEd Exhibit 16.0, at page 10). ComEd  
1696 includes the metering cost in its delivery charge rates and thereby allows  
1697 customers to reduce the CTC by the amount of the increased metering costs.  
1698 However, the higher meter costs result in an increased customer charge that will  
1699 directly impact rates when transition charges expire in 2006 or 2008.

1700 Q. What is your understanding ComEd's argument with respect to metering for  
1701 smaller customers?

1702 A. ComEd's argument includes for requiring interval meters primarily involves  
1703 eliminating "cross-subsidization" among customers from profile errors and  
1704 avoiding "gaming" opportunities that result from an ARES or a RES exploiting

1705 "systematic error in a load profiling methodology to deliver electric power and  
1706 energy to its customers for which it is not paying, or for which it is paying an  
1707 artificially reduced rate." (ComEd Exhibit 16.0, at page 10).

1708 Q. Discuss the economics of alternative metering requirements.

1709 A. At a fundamental level, meters are necessary to record billing data and are  
1710 necessary as a tool to measure usage. More expensive and sophisticated meters  
1711 allow rates to be structured in more complex ways. The more complex rates  
1712 enable customers to adjust their usage to take advantage of the rate and allocate  
1713 costs among customers in a class in a manner that more closely reflects costs.  
1714 Therefore, the implicit decision to use sophisticated meters involves a tradeoff  
1715 between the cost of the meter on the one hand and the ability to distinguish  
1716 between customers and affect consumption behavior on the other hand. From a  
1717 customer perspective, if the load is large enough to warrant a complex rate  
1718 structure, the customer has the opportunity to lower average prices through  
1719 improving the efficiency of their consumption. For example, in choosing to be on  
1720 a real time rate, the efficiency benefits of promoting off-peak relative to on-peak  
1721 use must outweigh the cost of the meter. Similarly, the traditional debate on time  
1722 of use pricing for residential customers involves the question of whether changes  
1723 in consumer behavior will have enough benefit to outweigh the added cost of  
1724 meters. If there is no change in the consumption behavior as a result of